

*Release of  
November 2006  
Retest Items*

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**Massachusetts Department of Education**

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This document was prepared by the  
Massachusetts Department of Education  
Dr. David P. Driscoll  
Commissioner of Education

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# Commissioner's Foreword

Dear Colleagues:

One of the goals of the Department of Education is to help schools acquire the capacity to plan for and meet the accountability requirements of both state and federal law. In keeping with this goal, the Department regularly releases MCAS test items to provide information regarding the kinds of knowledge and skills that students are expected to demonstrate. In November 2006, MCAS retests in Mathematics and English Language Arts were administered in high schools across the state. In keeping with our past practice of releasing all test items on which student results are based, I am pleased to announce that all questions from these tests are included in *Release of November 2006 MCAS Retest Items*.

This publication is available only through the Department of Education Web site at [www.doe.mass.edu/mcas/testitems.html](http://www.doe.mass.edu/mcas/testitems.html). The test items for both ELA and Mathematics can be easily printed from this site. With the exception of the ELA Composition writing prompt, the test questions in the November retests were identical to those in the August 2006 retests. I encourage local educators to use the relevant sections of this document together with their *Test Item Analysis Report Summaries* and *Test Item Analysis Rosters* as guides for planning changes in curriculum and instruction that may be needed to ensure that schools and districts make regular progress in improving student performance.

Thank you for your support as we work together to strengthen education for our students in Massachusetts.

Sincerely,

David P. Driscoll  
Commissioner of Education

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# I. Document Purpose and Structure

# *Document Purpose and Structure*

## **Purpose**

The purpose of this document is to share with educators and the public all of the test items from the November 2006 MCAS English Language Arts and Mathematics Retests. Local educators will be able to use this information to identify strengths and weaknesses in their curriculum and instruction, and to guide the changes necessary to more effectively meet their students' needs.

This document is also intended to be used by school and district personnel as a companion document to the Test Item Analysis Reports. Each school in which a retest was administered receives a November Retest *Test Item Analysis Report Summary* and a *Test Item Analysis Roster* for English Language Arts and Mathematics. These reports provide data generated from student responses. Each report lists, for the school receiving the report, the names of all enrolled students who took the November 2006 Retest in that report's content area, and shows how each student answered each test question (item). The report labels each item as multiple-choice, open-response, short-answer, or writing prompt and identifies the item's MCAS reporting category. Item numbers in this document correlate directly to the "Item Numbers" in the Test Item Analysis Reports.

## **Structure**

Chapters II and III of this document contain, respectively, information for the November 2006 English Language Arts and Mathematics Retests. Each of these chapters has three main sections. The **first section** introduces the chapter by listing the Massachusetts *Curriculum Framework* content strands assessed by MCAS in that chapter's content area. These content strands are identical to the MCAS reporting categories under which retest results are reported to schools and districts. In addition, there is a brief overview of the retest (number of test sessions, types of items, reference materials allowed, and cross-referencing information).

The **second section** contains the test items used to generate November 2006 MCAS student results for that chapter's content area. With the exception of the ELA Composition writing prompt, the test items in this document are shown in the same order and basic format in which they were presented in the test booklets. The *Mathematics Reference Sheet* used by students during MCAS Mathematics test sessions is inserted immediately following the last question in the Mathematics chapter.

Due to copyright restrictions, certain English Language Arts reading passages are not available on the Department's Internet site. Copyright information for all reading passages is provided in the document. For further information, contact Student Assessment Services at 781-338-3625.

The **final section** of each chapter is a table that cross-references each item with its MCAS reporting category and with the *Framework* standard it assesses. Correct answers to multiple-choice questions and, for the Mathematics retest, short-answer questions are also listed in the table.

Materials presented in this document are **not** formatted **exactly** as they appeared in student test booklets. For example, in order to present items most efficiently in this document, the following modifications have been made:

- Some fonts and/or font sizes may have been changed and/or reduced.
- Some graphics may have been reduced in size from their appearance in student test booklets; however, they maintain the same proportions in each case.
- All references to page numbers in answer booklets have been deleted from the directions that accompany test items.
- The November and August English Language Arts Composition writing prompts are presented on the same page of this document, and the four lined pages provided for students' initial drafts are omitted.

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## II. English Language Arts Retest

A. Composition

B. Language and Literature

# *English Language Arts Retest*

## **Test Structure**

The English Language Arts Retest was presented in the following two parts:

- the ELA Composition Retest, which used a writing prompt to assess learning standards from the Massachusetts *English Language Arts Curriculum Framework's* **Composition** strand
- the ELA Language and Literature Retest, which used multiple-choice and open-response questions (items) to assess learning standards from the *Curriculum Framework's* **Language and Reading and Literature** strands

## *A. Composition*

The English Language Arts (ELA) Composition Retest was based on learning standards in the Composition strand of the Massachusetts *English Language Arts Curriculum Framework* (2001). These learning standards appear on pages 72–83 of the *Framework*, which is available on the Department Web site at [www.doe.mass.edu/frameworks/ela/0601.pdf](http://www.doe.mass.edu/frameworks/ela/0601.pdf).

In Test Item Analysis Reports, ELA Composition Retest results are reported under the **Composition** reporting category.

## **Test Sessions and Content Overview**

The ELA Composition Retest included two separate test sessions, administered on the same day with a short break between sessions. During the first session, each student wrote an initial draft of a composition in response to the appropriate writing prompt on the next page. During the second session, each student revised his or her draft and submitted a final composition, which was scored in the areas of Topic Development and Standard English Conventions. The MCAS Writing Scoring Guide (Composition Grade 10) is available at [www.doe.mass.edu/mcas/student/2004/scoring10.doc](http://www.doe.mass.edu/mcas/student/2004/scoring10.doc).

## **Reference Materials**

At least one English-language dictionary per classroom was provided for student use during ELA Composition retest sessions. The use of bilingual word-to-word dictionaries was allowed for current and former limited English proficient students only. No other reference materials were allowed during either ELA Composition retest session.

## **Cross-Reference Information**

*Framework* general standards 19–22 are assessed by the ELA Composition.

## English Language Arts Retest

### November Retest Writing Prompt

#### WRITING PROMPT

Often in works of literature, a character faces a crisis that may be physical or moral. From a work of literature you have read in or out of school, select a character who faces a physical or moral crisis. In a well-developed composition, identify the character and the crisis, describe how the character faces the crisis, and explain how the crisis relates to the work as a whole.

### August Retest Writing Prompt

#### WRITING PROMPT

Often in works of literature, characters face difficult problems and attempt to solve them.

From a work of literature you have read in or out of school, select a character who faces a difficult problem and attempts to solve it. In a well-developed composition, identify the character, describe how the character attempts to solve the problem, and explain what the attempt to solve the problem reveals about the character.

## B. Language and Literature

The English Language Arts Language and Literature Retest was based on learning standards in the two content strands of the Massachusetts *English Language Arts Curriculum Framework* (2001) listed below. Page numbers for the learning standards appear in parentheses.

- Language (*Framework*, pages 19–26)
- Reading and Literature (*Framework*, pages 35–64)

The *English Language Arts Curriculum Framework* is available on the Department Web site at [www.doe.mass.edu/frameworks/ela/0601.pdf](http://www.doe.mass.edu/frameworks/ela/0601.pdf).

In Test Item Analysis Reports, ELA Language and Literature retest results are reported under two MCAS reporting categories: **Language** and **Reading and Literature**, which are identical to the two *Framework* content strands listed above.

### Test Sessions

The ELA Language and Literature Retest included three separate test sessions. Sessions 1 and 2 were both administered on the same day, and Session 3 was administered on the following day. Each session included selected readings, followed by multiple-choice and open-response questions. Reading passages and test items are shown on the following pages as they appeared in test booklets. Due to copyright restrictions, certain passages cannot be released to the public on the Web site.

### Reference Materials

The use of bilingual word-to-word dictionaries was allowed for limited English proficient students only, during all three ELA Language and Literature sessions. No other reference materials were allowed during any ELA Language and Literature retest session.

### Cross-Reference Information

The table at the conclusion of this chapter indicates each item’s reporting category and the *Framework* general standard it assesses. The correct answers for multiple-choice questions are also displayed in the table.

# English Language Arts

## LANGUAGE AND LITERATURE: SESSION 1

### DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and one open-response question. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

*Clara Miller is a unique woman. Read the newspaper article “Late for School” to learn about her accomplishments. Then answer the questions that follow.*

### LATE FOR SCHOOL

by Jane Gross

- 1 NEW PALTZ, N.Y.—Clara Miller’s son-in-law drives her to school, carries her heavy book bag, steers her around patches of ice in the parking lot and runs interference in the stairwells where undergraduates push and shove.
- 2 Her back hurts most of the time. Her hearing is not good enough to sit in the back of a lecture hall unless the professor is using a microphone. She has had breast cancer and cataract surgery. She struggles to recall names and dates.
- 3 It’s not easy being a 92-year-old college student.
- 4 Mrs. Miller is the oldest student in the State University of New York system and she is just 14 credits away from graduating with a degree in music. Still ahead is the dreaded science requirement, which she has put off, the same as many an 18-year-old. But if she can push through a heavy schedule next year, Mrs. Miller—white ringlets, stretch pants and all—could graduate alongside her 26-year-old granddaughter, Kristina Volberg.
- 5 “I used to say I got this far, so why should I bother going to college,” said Mrs. Miller. “But everyone in my family but me had a college degree, and I didn’t like that.”
- 6 Mrs. Miller was telling her story from a rocking chair by the window in her apartment in Wappingers Falls, where a wall clock plays snippets of classical music every hour on the hour. Her schoolbooks are piled on a card table within easy reach. Her computer, linked to the university, is in the spare bedroom. Housecleaning has taken a back seat to her studies, she said, apologizing for the clutter.
- 7 She is able to go to college because of a program here that awards her course credit for experiences she’s had during her life. Since she graduated from high school 75 years ago she has lived a lifetime filled with music—she has played and taught piano and organ, directed operettas, written church pageants and translated German cantatas. After reviewing all the musical work she has done, the college decided it was worth 88 credits. Students need 120 credits in order to graduate, so Mrs. Miller is taking classes to earn 32 more.
- 8 Teachers are impressed by Mrs. Miller. They say she brings years of knowledge to the classroom that the younger students do not have. One recent day, Mrs. Miller raised her hand to say that in her father’s church, in the 1930’s, women were barred from voting at congregational meetings, even if they were widowed and had no husband to represent them. She added that she was kept from applying to college, despite graduating at the top of her high school class, because her brother was in

the seminary<sup>1</sup> and her father could not afford to educate them both. Later she described a strict upbringing in which she had no choice but to become her father's organist at age 15.

9 Only after high school, when she traveled weekly to the Eastman School of Music in Rochester, did she find herself, Mrs. Miller said. There she studied piano under Ernst Bacon and organ under Abel Decaux, attended lectures by Ravel and Poulenc,<sup>2</sup> went to opera rehearsals, tried her hand at conducting.

10 "It was the first freedom I felt in my life," she said.

11 Now she has found a different kind of freedom. Her 63-year-old son-in-law drives her to college every day, and drives from one parking lot to the next, as her class schedule requires, so Mrs. Miller doesn't have to walk too far. She appreciates this because it means she can leave her walking stick at home.

12 "Everybody tells me how spry<sup>3</sup> I am," Mrs. Miller said. "I can't walk around here with a cane."

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<sup>1</sup> *seminary* — school for training ministers and priests

<sup>2</sup> *Ravel and Poulenc* — French composers

<sup>3</sup> *spry* — active

1 Which of the following is the **most likely** reason the author does not reveal Clara Miller's age until paragraph 3 and uses only one line to do it?

- A. to foreshadow the end
- B. to create surprise
- C. to show point of view
- D. to suggest motivation

2 Read the sentence from paragraph 4 in the box below.

Still ahead is the dreaded science requirement, which she has put off, the same as many an 18-year-old.

What does the sentence suggest about Mrs. Miller?

- A. She has traits in common with younger students.
- B. She dislikes being told what to do.
- C. She has too many other important responsibilities.
- D. She enjoys imitating younger people.

3 According to the article, why was Mrs. Miller given 88 credits toward her college degree?

- A. She was one of the top students in her high school graduating class.
- B. She was highly recommended for college by her family.
- C. She scored well in a variety of college entrance examinations.
- D. She was rewarded for her accomplishments in music.

4 Based on the article, what is Clara Miller's unique contribution to the classroom?

- A. a spirit of enthusiasm
- B. a feeling of independence
- C. a sense of self-respect
- D. a wealth of life experience

- 5 Based on the article, why did Mrs. Miller not attend college immediately after graduating from high school?
- A. She had to quit high school to become an organist.
  - B. She wanted to stay with her family rather than go away to college.
  - C. Her parents felt she should take piano lessons before attending college.
  - D. Her parents did not have money to pay for her tuition.
- 6 According to the article, when did Clara Miller first experience a sense of herself and her true interests?
- A. when she became her father's organist
  - B. when she attended the Eastman School of Music
  - C. when she was accepted at the State University of New York
  - D. when she recovered from breast cancer and cataract surgery
- 7 The title of the article, "Late for School," is a pun. What is the effect of the pun?
- A. It highlights the idea that one is never too old to get an education.
  - B. It emphasizes that the best time to get an education is during one's youth.
  - C. It reinforces the notion that going to college is not for everyone.
  - D. It emphasizes that tardiness is a major problem in college.
- 8 In paragraph 6, what does the phrase "taken a back seat" mean?
- A. improved upon
  - B. been less exciting
  - C. proceeded cautiously
  - D. become less important

**Write your answer to open-response question 9 in the space provided in your Student Answer Booklet.**

- 9** Based on the article, describe the advantages and disadvantages Clara Miller experiences in attending school as a 92-year-old woman. Use relevant and specific information from the article to support your answer.

*In the 1940s, while the Dodgers baseball team was still in Brooklyn, they were known as loveable losers. Their fans were loyal and passionate in their support. In the following excerpt, taken from the first chapter of Wait Till Next Year, Doris Kearns Goodwin writes about her baseball experiences during the summer of 1949. Read the excerpt and answer the questions that follow.*

## **WAIT TILL NEXT YEAR: A MEMOIR**

by DORIS KEARNS GOODWIN

Students read an excerpt from WAIT TILL NEXT YEAR: A Memoir and then answered questions 10 through 13 that follow on page 15 of this document.

Due to copyright restrictions, the selection cannot be released to the public over the Internet. For more information, see the copyright citation below.

Reprinted with the permission of Simon & Schuster Adult Publishing Group, from WAIT TILL NEXT YEAR: A Memoir by Doris Kearns Goodwin. Copyright © 1997 by Blithedale Productions, Inc. All rights reserved.

Due to copyright restrictions, the selection that appeared on this page cannot be released to the public over the Internet. For more information, see the citation on the previous page.

- 10 According to the excerpt, why did the author keep score for baseball games during the summer of 1949?
- A. so that she had something to do while she was not in school
  - B. so that she could tell her father about the game
  - C. so that she could learn to be a professional scorekeeper
  - D. so that she was able to write about the experience later in life
- 11 According to the excerpt, how did the author find out what was happening at the games?
- A. She watched the television.
  - B. She read the newspaper.
  - C. She listened to the radio.
  - D. She attended the games in person.
- 12 Which of the following phrases from paragraph 2 **most** clearly indicates how much the author wanted the Dodgers to win?
- A. “. . . I carefully printed each player’s name . . .”
  - B. “. . . I recorded every play.”
  - C. “. . . I tried to make a bargain . . .”
  - D. “. . . I stayed at my post . . .”
- 13 In paragraph 2, what does the word *cajoling* **most nearly** mean?
- A. agreeing
  - B. shouting
  - C. criticizing
  - D. urging

# English Language Arts

## LANGUAGE AND LITERATURE: SESSION 2

### DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and one open-response question. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

*Ten-year-old Jim Burden has lost both of his parents and has come to live with his grandparents in Nebraska. In this excerpt from the novel *My Ántonia*, Jim is getting to know both his grandmother and his grandparents' farm. Read the excerpt and answer the questions that follow.*

### *My Ántonia*

by WILLA CATHER

1 As I looked about me I felt that the grass was the country, as the water is the sea. The red of the grass made all the great prairie the colour of wine-stains, or of certain seaweeds when they are first washed up. And there was so much motion in it; the whole country seemed, somehow, to be running.

2 I had almost forgotten that I had a grandmother, when she came out, her sunbonnet on her head, a grain-sack in her hand, and asked me if I did not want to go to the garden with her to dig potatoes for dinner.

3 The garden, curiously enough, was a quarter of a mile from the house, and the way to it led up a shallow draw\* past the cattle corral. Grandmother called my attention to a stout hickory cane, tipped with copper, which hung by a leather thong from her belt. This, she said, was her rattlesnake cane. I must never go to the garden without a heavy stick or a corn-knife; she had killed a good many rattlers on her way back and forth. A little girl who lived on the Black Hawk road was bitten on the ankle and had been sick all summer.

4 I can remember exactly how the country looked to me as I walked beside my grandmother along the faint wagon-tracks on that early September morning. Perhaps the glide of long railway travel was still with me, for more than anything else I felt motion in the landscape; in the fresh, easy-blowing morning wind, and in the earth itself, as if the shaggy grass were a sort of loose hide, and underneath it herds of wild buffalo were galloping, galloping. . . .

5 Alone, I should never have found the garden — except, perhaps, for the big yellow pumpkins that lay about unprotected by their withering vines — and I felt very little interest in it when I got there. I wanted to walk straight on through the red grass and over the edge of the world, which could not be very far away. The light air about me told me that the world ended here: only the ground and sun and sky were left, and if one went a little farther there would be only sun and sky, and one would float off into them, like the tawny hawks which sailed over our heads making slow shadows on the grass. While grandmother took the pitchfork we found standing in one of the rows and dug potatoes, while I picked them up out of the soft brown earth and put them into the bag, I kept looking up at the hawks that were doing what I might so easily do.

6 When grandmother was ready to go, I said I would like to stay up there in the garden awhile.

7 She peered down at me from under her sunbonnet. "Aren't you afraid of snakes?"

8 "A little," I admitted, "but I'd like to stay, anyhow."

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\* *draw* — a small, dry streambed

- 9 “Well, if you see one, don’t have anything to do with him. The big yellow and brown ones won’t hurt you; they’re bull-snakes and help to keep the gophers down. Don’t be scared if you see anything look out of that hole in the bank over there. That’s a badger hole. He’s about as big as a big ’possum, and his face is striped, black and white. He takes a chicken once in a while, but I won’t let the men harm him. In a new country a body feels friendly to the animals. I like to have him come out and watch me when I’m at work.”
- 10 Grandmother swung the bag of potatoes over her shoulder and went down the path, leaning forward a little. The road followed the windings of the draw; when she came to the first bend, she waved at me and disappeared. I was left alone with this new feeling of lightness and content.
- 11 I sat down in the middle of the garden, where snakes could scarcely approach unseen, and leaned my back against a warm yellow pumpkin. There were some ground-cherry bushes growing along the furrows, full of fruit. I turned back the papery triangular sheaths that protected the berries and ate a few. All about me giant grasshoppers, twice as big as any I had ever seen, were doing acrobatic feats among the dried vines. The gophers scurried up and down the ploughed ground. There in the sheltered draw-bottom the wind did not blow very hard, but I could hear it singing its humming tune up on the level, and I could see the tall grasses wave. The earth was warm under me, and warm as I crumbled it through my fingers. Queer little red bugs came out and moved in slow squadrons around me. Their backs were polished vermilion, with black spots. I kept as still as I could. Nothing happened. I did not expect anything to happen. I was something that lay under the sun and felt it, like the pumpkins, and I did not want to be anything more. I was entirely happy. Perhaps we feel like that when we die and become a part of something entire, whether it is sun and air, or goodness and knowledge. At any rate, that is happiness; to be dissolved into something complete and great. When it comes to one, it comes as naturally as sleep.

Excerpt from *My Ántonia* first published in 1918 by Willa Sibert Cather (1873–1947).

- 14 What is the **main** idea of paragraph 3?
- A. The garden is a long way from the house and hard to reach.
  - B. Grandmother educates the narrator about his new environment.
  - C. The boy decides to go to the garden to dig potatoes for dinner.
  - D. Grandmother needs a hickory cane to help her walk.
- 15 In paragraph 4, what does the statement “Perhaps the glide of long railway travel was still with me” tell the reader about the narrator?
- A. He is tired of walking.
  - B. He likes trains.
  - C. He has recently arrived.
  - D. He misses his home.

- 16 Read the words from the excerpt in the box below.

... as if the shaggy grass were a sort of loose hide, and underneath it herds of wild buffalo were galloping, galloping . . .

- What is the effect of the repetition of “galloping”?
- A. to foreshadow his experiences in the garden
  - B. to show there are many buffalo
  - C. to develop the setting further
  - D. to convey a sense of continuous movement
- 17 Based on the excerpt, how does Grandmother try to make the boy feel at ease in his new surroundings?
- A. She gives him her cane.
  - B. She tells him about her neighbors.
  - C. She teaches him how to dig potatoes with a pitchfork.
  - D. She tells him how to react to animals in the garden.

- 18 According to the excerpt, which of the following **best** explains why the grandmother “won’t let the men harm” the badger?
- A. She enjoys the company of the badger when she works.
  - B. She needs the badger to keep away the snakes.
  - C. She believes the badger brings good luck to her garden.
  - D. She wants to keep the badger as a pet.
- 19 Based on the excerpt, which of the following **best** describes the narrator’s belief about happiness?
- A. Happiness is a temporary state of mind.
  - B. Happiness is a different experience for everyone.
  - C. Happiness is something one must search long and hard for.
  - D. Happiness is being part of something larger than oneself.

- 20 Read the words from paragraph 11 in the box below.

I was something that lay under the sun and felt it, like the pumpkins . . .

What do the words suggest?

- A. The narrator enjoys the September weather.
  - B. The narrator is at peace with nature.
  - C. The narrator loves gardens.
  - D. The narrator is tired from traveling.
- 21 What color is *vermilion* in paragraph 11?
- A. black
  - B. red
  - C. brown
  - D. yellow

Write your answer to open-response question 22 in the space provided in your Student Answer Booklet.

- 22 Based on the excerpt, describe the narrator's relationship with the land. Use relevant and specific information from the excerpt to support your answer.

American Indian poet Mary TallMountain remembers events from her childhood in “Ts’eeekkaayah/Spring Camp.” Read the poem to find out about her memories and answer the questions that follow.

## Ts’eeekkaayah

### Spring Camp

In the month of Beaver  
 I watch the night sky  
 Thinking this was the time of year  
 We made spring camp  
 5 Memories stretch and pull around me—  
 Bark drying on a new canoe.

Hunters sprawl by the fire  
 Outcamp bread bubbles in grease,  
 Duck soup gurgles  
 10 In the old black dutch oven.<sup>1</sup>  
 ’Way off, drifting through birches  
 Fat smells drown our mouths

Mom calls “*Onee*’!”<sup>2</sup>  
 Yelling we race to camp,  
 15 Tumbling brown bear cubs.  
 Uncle and Papa grumble at us  
 In gruff voices I have heard for a lifetime.

Listen. My brothers are singing.  
 Bernie squeaks a high note,  
 20 Makes Billy start giggling.  
 They wrestle awhile.  
 After supper they make caribou song,  
 Honking on a tin harmonica.

Echoing cloud voices call  
 25 Over Nulato, over Kaiyuh  
 High over Denali, over Chugach,  
 Over miles of islands,  
 Years of dancing, mourning  
 Loving, dying.

<sup>1</sup> *dutch oven* — deep heavy cast iron pot or kettle

<sup>2</sup> *Onee*’! — Come on!

30 Crowfeather shadows crawl  
Along thin blue edges of darkness  
Great horned owl sails low,  
Winter grey wings fan the river,  
Her yellow eyes blazing  
35 Threaten *yeega*',<sup>3</sup> bad luck spirits.

We yawn into our beds  
Inside a ring of sleeping dogs.  
Papa says they keep away wolves.  
We snug down furry,  
40 Billy and I wrapped in  
Dark music of spruce trees.

Breath of life flows through our spirits  
From forest, flames, owls wings.  
Our breath is one  
45 Under the shining of *Dolt'ol*<sup>4</sup>  
Walking through the sky.

—*Mary TallMountain*

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<sup>3</sup> *yeega*' — spirits of bad luck

<sup>4</sup> *Dolt'ol* — the moon

- 23 Which of the following **best** expresses a theme in the poem?
- A. The young have no fear of nature.
  - B. The natural world and the lives of humans are connected.
  - C. Change is the only thing that is certain.
  - D. The world today does not respect old traditions.

- 24 According to the poem, what causes the speaker to recall the past?
- A. the sound of her mother calling “*Onee*!”
  - B. the night sky during the month of Beaver
  - C. the smell of bread bubbling in grease
  - D. the shadows of crows flying overhead

- 25 Read line 12 from the poem in the box below.

Fat smells drown our mouths

What does the line suggest to the reader?

- A. The odor of the food makes the children’s mouths water.
- B. The food the children are used to eating is unhealthy.
- C. Dinner is often a distraction from the children’s play.
- D. The rich aroma of the forest is invigorating to the children.

- 26 What does the metaphor in line 15 convey?
- A. youth and playfulness
  - B. loss and regret
  - C. ease and prosperity
  - D. anger and revenge

# English Language Arts

## LANGUAGE AND LITERATURE: SESSION 3

### DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and two open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

As a young child you may have heard various fairy tales. Did you wonder where they came from? Read this article “The Brothers Grimm” from National Geographic magazine to learn about the origin of some fairy tales. Answer the questions that follow.

## THE BROTHERS GRIMM

by Thomas O’Neill



<sup>1</sup> *Once upon a time there lived in Germany two brothers who loved a good story—one with magic and danger, royalty and rogues. As boys they played and studied together, tight as a knot,*

savoring their childhood in a small town. But their father died unexpectedly, and the family grew poor. One brother became sickly; the other, serious beyond his years. At school they met a wise man who led them to a treasure—a library of old books with tales more seductive than any they had ever heard. Inspired, the brothers began collecting their own stories, folktales told to them mostly by women, young and old. Soon the brothers brought forth their own treasure—a book of fairy tales that would enchant millions in far-away places for generations to come.

<sup>2</sup> The Brothers Grimm, Jacob and Wilhelm, named their story collection *Children’s and Household Tales* and

published the first of its seven editions in Germany in 1812. The table of contents reads like an A-list of fairy-tale celebrities: Cinderella, Sleeping Beauty, Snow White, Little Red Riding Hood, Rapunzel, Rumpelstiltskin, Hansel and Gretel, the Frog King. Dozens of other characters—a carousel of witches, servant girls, soldiers, stepmothers, dwarfs, giants, wolves, devils—spin through the pages. Drawn mostly from oral narratives, the 210 stories in the Grimms’ collection represent an anthology of fairy tales, animal fables, rustic farces, and religious allegories<sup>1</sup> that remains unrivaled to this day.

<sup>3</sup> *Grimms’ Fairy Tales*, as the English-language version is usually called,

<sup>1</sup> *rustic farces, and religious allegories* — types of literature: A farce is a humorous play with exaggerated characters and an unlikely plot. An allegory is a story that uses people, events, and things to represent ideas. It usually teaches a moral lesson.

pervades world culture. So far the collection has been translated into more than 160 languages, from Inupiat in the Arctic to Swahili in Africa. In the United States book buyers have their choice of 120 editions. As a publishing phenomenon the Grimms' opus<sup>2</sup> competes with the Bible. And the stories and their star characters continue to leap from the pages into virtually every medium: theater, opera, comic books, movies, paintings, rock music, advertising, fashion. The Japanese, perhaps the most ravenous of all the Grimms' fans, have built two theme parks devoted to the tales. In the United States the Grimms' collection furnished much of the raw material that helped launch Disney as a media giant. Cinderella and Snow White easily hold their own with the new kids on the block, whether Big Bird or Bart Simpson.

4 As for the brothers, they are recognized as pioneers in the field of folklore research. Their crystalline<sup>3</sup> fairy-tale style—the Grimms extensively edited and rewrote drafts of the narratives—has influenced generations of children's writers and paved the way for other masters of the genre, from Hans Christian Andersen to Maurice Sendak. But the Grimms' stories do not speak only to the young. "The age for hearing these fairy tales is three years to death," says Elfriede Kleinhaus, a professional storyteller in Germany. "Our world can seem so technical and cold. All of us need these stories to warm our souls."

5 SUCH LASTING FAME would have shocked the humble Grimms. During their lifetimes the collection sold modestly in Germany, at first only a few hundred copies a year. The early editions were not even aimed at children. The brothers initially refused to consider illustrations, and scholarly footnotes took up almost as much space as the tales themselves.

6 Jacob and Wilhelm viewed themselves as patriotic folklorists, not as entertainers of children. They began their work at a time when Germany, a messy patchwork of fiefdoms and principalities,<sup>4</sup> had been overrun by the French under Napoleon. The new rulers were intent on suppressing local culture. As young, workaholic scholars, single and sharing a cramped flat,<sup>5</sup> the Brothers Grimm undertook the fairy-tale collection with the goal of saving the endangered oral tradition of Germany.

7 For much of the 19th century teachers, parents, and religious figures, particularly in the United States, deplored the Grimms' collection for its raw, uncivilized content. An American educator in 1885 railed: "The folktales mirror all too loyally the entire medieval worldview and culture with all its stark prejudice, its crudeness and barbarities." Offended adults objected to the gruesome punishments inflicted on the stories' villains. In the original "Snow White" the evil stepmother is forced to dance in red-hot iron shoes until she falls down dead. In "The Goose Maid" a treacherous servant is stripped, thrown

<sup>2</sup> *opus* — work

<sup>3</sup> *crystalline* — having a set structure

<sup>4</sup> *fiefdoms and principalities* — territories ruled by feudal lords or by princes or princesses

<sup>5</sup> *flat* — apartment

into a barrel studded with sharp nails, and dragged through the streets. Even today some protective parents shy from the Grimms' tales because of their reputation for violence.

8 Despite its sometimes rocky reception, *Children's and Household Tales* gradually took root with the public. The brothers had not foreseen that the appearance of their work would coincide with a great flowering of children's literature in Europe. English publishers led the way, issuing high-quality picture books such as *Jack and the Beanstalk* and handsome folktale collections, all to satisfy a newly literate audience seeking virtuous material for the nursery. Once the Brothers Grimm sighted this new public, they set about refining and softening their tales, which had originated centuries earlier as earthy peasant fare. . . .

9 In the 20th century the Grimms' fairy tales have come to rule the bookshelves of children's bedrooms. And why not? The stories read like dreams come true: Handsome lads and beautiful damsels, armed with magic, triumph over giants and witches and wild beasts. They outwit mean, selfish adults. Inevitably the boy and girl fall in love and live happily ever after. *Read me another one, please.*

10 And parents keep reading because they approve of the finger-wagging lessons inserted in the stories: Keep your promises, don't talk to strangers, work hard, obey your parents. According to the Grimms, the collection served as "a manual of manners."

Thomas O'Neill/National Geographic Society Image Collection

- 27 In paragraph 1, what does the phrase “tight as a knot” describe?
- A. the kinds of stories Jacob and Wilhelm Grimm told
  - B. the relationship between Jacob and Wilhelm Grimm
  - C. the treasure Jacob and Wilhelm Grimm received as children
  - D. the way Jacob and Wilhelm Grimm wrote their stories
- 28 What is the **main** purpose of paragraph 3?
- A. to present a brief biography of the Grimm brothers
  - B. to show the influence of the Grimm brothers’ work
  - C. to describe the writing methods of the Grimm brothers
  - D. to discuss problems caused by the Grimm brothers’ work

- 29 Read the sentence from paragraph 4 in the box below.

“The age for hearing these fairy tales is three years to death,” says Elfriede Kleinhans, a professional storyteller in Germany.

What does the quotation suggest about the Grimms’ fairy tales?

- A. They are appropriate for a wide range of readers.
  - B. They are appreciated by readers all over the world.
  - C. They are most popular with people who are unable to read.
  - D. They are most enjoyed when read by a professional storyteller.
- 30 Which of the following phrases from paragraph 8 is a metaphor?
- A. “a great flowering of children’s literature”
  - B. “English publishers led the way”
  - C. “high-quality picture books”
  - D. “virtuous material for the nursery”

- 31 Read the sentence from paragraph 8 in the box below.

Despite its sometimes rocky reception, *Children's and Household Tales* gradually took root with the public.

- What does the sentence suggest about the Grimms' book?
- A. Parents either loved or hated reading the book.
  - B. The purpose of the book became clearer.
  - C. The popularity of the book grew over time.
  - D. Children learned about the book only after more tales were added.

- 32 What do the italicized words in paragraph 9 represent?
- A. the words of a child who has just heard a story
  - B. the voice of a character in a fairy tale
  - C. the title of one of the Grimm brothers' stories
  - D. the thoughts of a parent who loves fairy tales

- 33 In the first sentence of the article, to which of the following does the word *one* refer?
- A. Germany
  - B. a brother
  - C. a story
  - D. time

- 34 Which of the following is the **best** definition of the word *deplored* as it is used in paragraph 7?
- A. found excuses for
  - B. had never heard of
  - C. revealed inaccuracies in
  - D. expressed disapproval of

Write your answer to open-response question 35 in the space provided in your Student Answer Booklet.

- 35 Based on the article, explain how people's reasons for reading *Grimms' Fairy Tales* have changed over time. Use relevant and specific information from the article to support your answer.

Willie Clark and Al Lewis were a comedy team known as Lewis and Clark, the Sunshine Boys. However, they broke up and went their separate ways. In this excerpt from the play *The Sunshine Boys*, Ben, Willie's nephew and agent, has come with a contract for the team to give one last performance. Read the excerpt and answer the questions that follow.

## The Sunshine Boys

by Neil Simon

- BEN                   It's been eleven years, Uncle Willie. Hasn't time changed anything for you?
- WILLIE               Yes. I hate him eleven years more.
- BEN                   Why?
- WILLIE               Why? . . . You never met him?
- 5 BEN                   Sure I met him. I was fifteen years old. I met him once at that benefit at Madison Square Garden and once backstage at some television show. He seemed nice enough to me.
- WILLIE               That's only twice. You had to meet him three times to hate him.
- BEN                   Uncle Willie, could I make a suggestion?
- 10 WILLIE              He used to give me the finger.
- BEN                   The what?
- WILLIE               The finger! The finger! He would poke me in the chest with the finger. (*He crosses to BEN and demonstrates on him by poking a finger in BEN's chest every time he makes a point*) He would say, "Listen, Doctor." (*Pokes finger*) "I'm telling you, Doctor." (*Pokes finger*) "You know what I mean, Doctor." (*Pokes finger. BEN rubs his chest in pain*) Hurts, doesn't it? How'd you like it for forty-three years? I got a black and blue hole in my chest. My wife to her dying day thought it was a tattoo. I haven't worked with him in eleven years, it's just beginning to fade away . . . The man had the sharpest finger in show business.
- 15
- 20 BEN                   If you work with him again, I promise you I'll buy you a thick padded undershirt.
- WILLIE               You think I never did that? One night I put a steel plate under my shirt. He gave me the finger, he had it in a splint for a month.
- BEN                   Something else must have happened you're not telling me about. You don't
- 25 work with a person for forty-three years without some bond of affection remaining.
- WILLIE               You wanna hear other things? He used to spit in my face. Onstage *the man would spit in my face!*
- BEN                   Not on purpose.
- WILLIE               (*Turns away*) He tells me "not on purpose" . . . If there was some way I could
- 30 have saved the spit, I would show it to you.
- BEN                   You mean he would just stand there and spit in your face?

- WILLIE           What do you think, he's stupid? He worked it into the act. He would stand with his nose on top of my nose and purposely only say words that began with a "T." (As he demonstrates, he spits) "Tootsie Roll." (Spit) "Tinker Toy." (Spit) "Typing on the typewriter." (Spits. BEN wipes his face) Some nights I thought I would drown! I don't know where he got it all from . . . I think he would drink all day and save it up for the night.
- BEN               I'll put it in the contract. If he spits at you, he won't get paid.
- WILLIE           If he can get another chance to spit at me, he wouldn't *want* to get paid.
- 40 BEN            Then will you answer me one question? If it was all that bad, why did you stick together for forty-three years?
- WILLIE           (Turns; looks at him) Because he was terrific. There'll never be another one like him . . . Nobody could time a joke the way he could time a joke. Nobody could say a line the way he said it. I knew what he was thinking, he knew what I was thinking. One person, that's what we were . . . No, no. Al Lewis was the best. The *best!* You understand?
- BEN               I understand.
- WILLIE           As an actor, no one could touch him. As a human being, no one *wanted* to touch him.
- 50 BEN            (Sighs) So what do I tell C.B.S.? No deal because Al Lewis spits?
- WILLIE           You know when the last time was we worked together?
- BEN               Eleven years ago on *The Ed Sullivan Show*.
- WILLIE           Eleven years ago on *The Ed Sullivan Show*. July twenty-seventh. He wouldn't put us on in the winter when people were watching, but never mind. We did The Doctor and the Tax Examination. You never saw that, did you?
- 55 BEN            No, but I heard it's wonderful.
- WILLIE           What about a "classic"? A *classic!* A *dead* person watching that sketch would laugh. We did it maybe eight thousand times, it never missed . . . *That* night it missed. Something was wrong with him, he was rushing, his timing was off, his mind was someplace else. I thought he was sick. Still, we got terrific applause. Five times Ed Sullivan said, "How about that?" We got back into the dressing room, he took off his make-up, put on his clothes, and said to me, "Willie, if it's all the same to you, I'm retiring." I said, "What do you mean, retiring? It's not even nine o'clock. Let's have something to eat." He said, "I'm not retiring for the night. I'm retiring for what's left of my life." And he puts on his hat, walks out of the theater, becomes a stockbroker and I'm left with an act where I ask questions and there's no one there to answer. Never saw the man again to this day. Oh, he called me, I wouldn't answer. He wrote me, I tore it up. He sent me telegrams, they're probably still under the door.
- 65

...

Excerpt from THE SUNSHINE BOYS © 1973 by Neil Simon. Copyright renewed 2001 by Neil Simon. All rights reserved.

- 36 What is the main idea of the excerpt?
- A. Working in the theater is difficult.
  - B. Admiration cannot always overcome hurt feelings.
  - C. Comedy sketches require careful acting.
  - D. Being on television does not guarantee fame.
- 37 Based on the excerpt, what is the **most likely** reason Al gave a poor performance on *The Ed Sullivan Show*?
- A. He was physically ill at the time.
  - B. He was trying to make Willie look bad.
  - C. He was thinking about his retirement.
  - D. He was bored from doing the sketch so often.
- 38 Based on the excerpt, what is contradictory about Willie's attitude toward Al?
- A. He resents Al's hurting him in their act but does nothing about it.
  - B. He dislikes Al but remains a close friend for years.
  - C. He criticizes Al's retiring but is glad to be acting alone.
  - D. He hates Al but is complimentary of his talents.
- 39 In line 50, why does the word (*Sighs*) appear in italics and parentheses?
- A. It is a clue that this line is important.
  - B. It is a stage direction to the actor.
  - C. It is a word spoken by the narrator.
  - D. It is a sign that the play is ending.

Write your answer to open-response question 40 in the space provided in your Student Answer Booklet.

- 40 Describe the different ways Ben tries to persuade Willie to sign a contract and Willie's response to his efforts. Use relevant and specific information from the excerpt to support your answer.

**English Language Arts  
Language and Literature Retest  
November 2006 Released Items:  
Reporting Categories, Standards, and Correct Answers\***

Item No.	Page No.	Reporting Category	Standard	Correct Answer (MC)*
1	10	<i>Reading and Literature</i>	13	B
2	10	<i>Reading and Literature</i>	13	A
3	10	<i>Reading and Literature</i>	8	D
4	10	<i>Reading and Literature</i>	13	D
5	11	<i>Reading and Literature</i>	13	D
6	11	<i>Reading and Literature</i>	8	B
7	11	<i>Reading and Literature</i>	15	A
8	11	<i>Language</i>	4	D
9	12	<i>Reading and Literature</i>	13	
10	15	<i>Reading and Literature</i>	8	B
11	15	<i>Reading and Literature</i>	8	C
12	15	<i>Reading and Literature</i>	13	C
13	15	<i>Language</i>	4	D
14	18	<i>Reading and Literature</i>	8	B
15	18	<i>Reading and Literature</i>	12	C
16	18	<i>Reading and Literature</i>	15	D
17	18	<i>Reading and Literature</i>	12	D
18	19	<i>Reading and Literature</i>	12	A
19	19	<i>Reading and Literature</i>	12	D
20	19	<i>Reading and Literature</i>	12	B
21	19	<i>Language</i>	4	B
22	20	<i>Reading and Literature</i>	12	
23	23	<i>Reading and Literature</i>	11	B
24	23	<i>Reading and Literature</i>	14	B
25	23	<i>Reading and Literature</i>	14	A
26	23	<i>Reading and Literature</i>	14	A
27	27	<i>Reading and Literature</i>	13	B
28	27	<i>Reading and Literature</i>	13	B
29	27	<i>Reading and Literature</i>	13	A
30	27	<i>Reading and Literature</i>	15	A
31	28	<i>Reading and Literature</i>	13	C
32	28	<i>Reading and Literature</i>	13	A
33	28	<i>Language</i>	5	C
34	28	<i>Language</i>	4	D
35	29	<i>Reading and Literature</i>	13	
36	32	<i>Reading and Literature</i>	17	B
37	32	<i>Reading and Literature</i>	17	C
38	32	<i>Reading and Literature</i>	17	D
39	32	<i>Reading and Literature</i>	17	B
40	33	<i>Reading and Literature</i>	17	

\* Answers are provided here for multiple-choice items only. Each open response item has its own set of scoring guidelines, which allow for valid alternate interpretations and responses.

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## III. Mathematics Retest

# Mathematics Retest

The Mathematics Retest was based on learning standards in the Massachusetts *Mathematics Curriculum Framework* (2000). The *Framework* identifies five major content strands, listed below.

- Number Sense and Operations
- Patterns, Relations, and Algebra
- Geometry
- Measurement
- Data Analysis, Statistics, and Probability

The grades 9–10 learning standards for these strands appear on pages 72–75 of the *Mathematics Curriculum Framework*, which is available on the Department Web site at [www.doe.mass.edu/frameworks/math/2000/final.pdf](http://www.doe.mass.edu/frameworks/math/2000/final.pdf).

In Test Item Analysis Reports, Mathematics retest results are reported under five MCAS reporting categories, which are identical to the five *Mathematics Curriculum Framework* content strands listed above.

## Test Sessions

The Mathematics Retest included two separate test sessions, which were administered on consecutive days. Each session included multiple-choice and open-response items. Session 1 also included short-answer questions.

## Reference Materials and Tools

Each student taking the Mathematics Retest was provided with a *Grade 10 Mathematics Reference Sheet* and was allowed to refer to it at any time during testing. A copy of the reference sheet follows the final question in this chapter.

During session 2, each student had sole access to a calculator with at least four functions and a square root key. Calculator use was not allowed during session 1.

The use of bilingual word-to-word dictionaries was allowed for limited English proficient students only during both Mathematics retest sessions. No other reference tools or materials were allowed.

## Cross-Reference Information

The table at the conclusion of this chapter indicates each item’s reporting category and the *Framework* learning standard it assesses. The correct answers for multiple-choice and short-answer items are also displayed in the table.

# Mathematics

## SESSION 1

You may use your reference sheet during this session.  
You may **not** use a calculator during this session.



### DIRECTIONS

This session contains fourteen multiple-choice questions, four short-answer questions, and three open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

- 1 What is the value of the expression below?

$$(3 \cdot 2)^2 - 3 \cdot 2^2$$

- A. 0
- B. 12
- C. 13
- D. 24

- 2 In the table below,  $y$  is a quadratic function of  $x$ .

$x$	1	2	3	4	5	6	7
$y$	2	5	10	17	26		?

What is the value of  $y$  when  $x = 7$ ?

- A. 63
- B. 50
- C. 44
- D. 39

- 3 The stem-and-leaf plot below shows the ages, in years, of 15 students when they arrived on the first day of an exercise class.

**Ages of 15  
Exercise Class Students**

1	5 7 8
2	0 2 4 7
3	1 1 2 3 7
4	1 6
5	0

**Key**

1 | 9 represents 19

One additional student arrived later that day. Then the range of the student ages, including the age of the additional student, was 50 years.

What was the age, in years, of the additional student?

- A. 45
- B. 50
- C. 55
- D. 65

- 4 What value of  $n$  makes the equation below true?

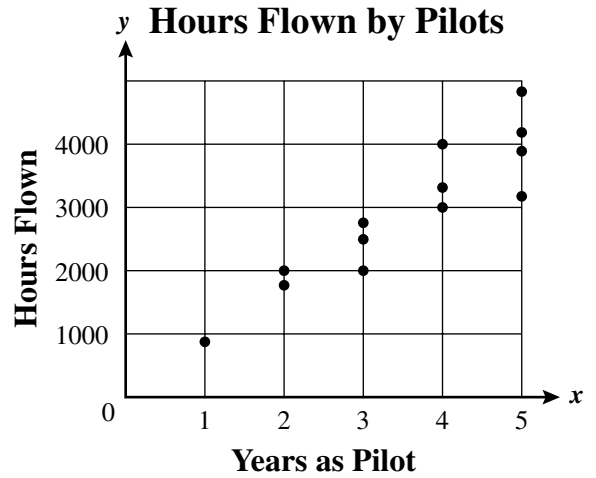
$$16^2 = 2^n$$

- A. 4
- B. 6
- C. 8
- D. 10

- 5 Dori asked 13 airplane pilots the following questions:

- “How many years have you been a pilot?”
- “How many hours have you flown?”

The scatterplot below shows the results of her survey.



Which of the following equations best represents the line of best fit for the data in the scatterplot?

- A.  $y = 0.001x$
- B.  $y = -0.001x$
- C.  $y = -850x$
- D.  $y = 850x$

- 6 Which of the following is **not** equivalent to the expression below?

$$|3 - 5|$$

- A.  $|5 - 3|$   
B.  $5 - 3$   
C.  $-(3 - 5)$   
D.  $3 - 5$

- 7 Felicity won a free round-trip airline ticket to California. She plans to go there for her vacation, but she must pay for everything herself except for the airline ticket. She estimated her vacation costs, as shown in the table below.

**Felicity's Estimated Vacation Costs**

Expense	Estimated Cost
Hotel	\$140 per day
Meals	\$60 per day
All Other Expenses	\$400 during the entire trip

Felicity budgeted \$1000 to spend on all of her vacation costs. Which of the following can Felicity use to estimate the number of days she can stay in California without going over her budget?

- A.  $\frac{1000 - 400}{200}$   
B.  $\frac{1000}{200} - 400$   
C.  $\frac{1000 - 600}{400}$   
D.  $\frac{1000}{600}$

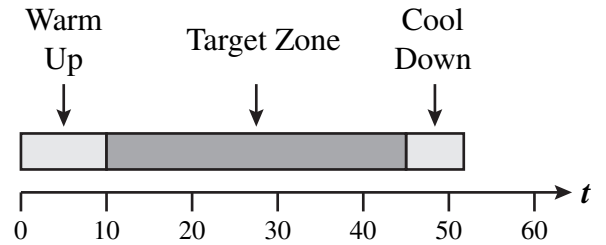
- 8 Which of the following is equivalent to the expression below?

$$3(9x + 12) - (2x + 5)$$

- A.  $29x + 41$
- B.  $25x + 31$
- C.  $29x + 17$
- D.  $25x + 7$

- 9 Clara’s exercise bicycle has a graphic display that shows how much time she spent in the warm up, target zone, and cool down portions of her workout, as shown below.

**Exercise Bicycle Display**



**Clara’s Workout Time (minutes)**

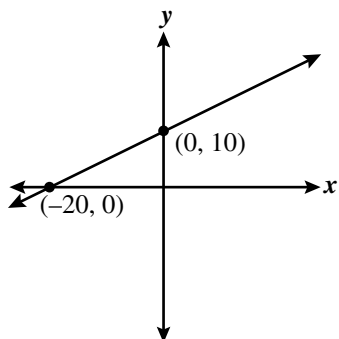
According to the display, which of the following is closest to the percent of Clara’s workout time that was spent in the target zone?

- A. 35%
- B. 45%
- C. 70%
- D. 90%

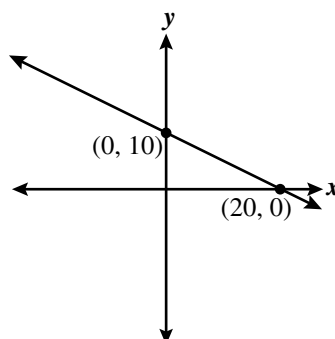
- 10 Which of the following is the graph of the equation below?

$$y = -\frac{1}{2}x + 10$$

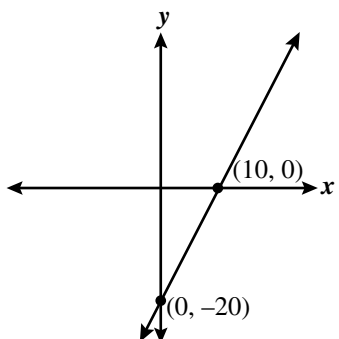
A.



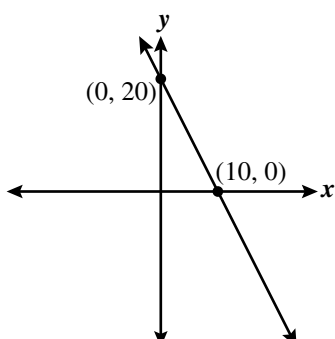
C.



B.



D.



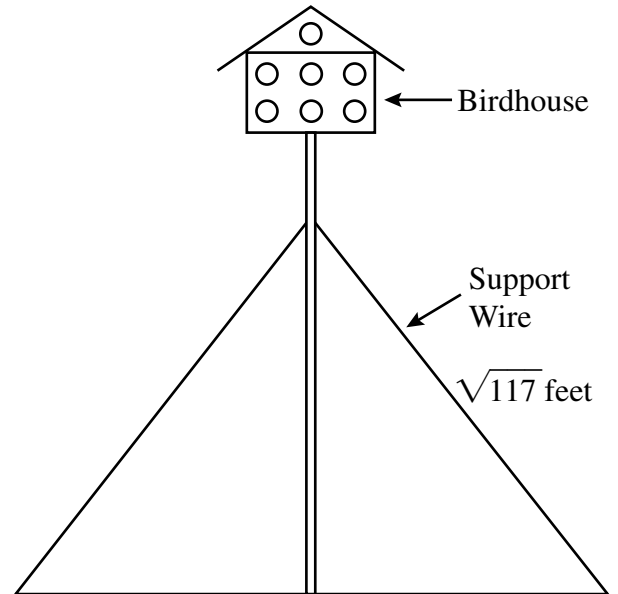
- 11 Last year, Kristen read a total of 30 fiction and non-fiction books. The number of non-fiction books was 5 less than 4 times the number of fiction books.

What is the total number of **fiction** books that Kristen read last year?

- A. 5
- B. 7
- C. 23
- D. 25

- 12 Kelly plans to build a birdhouse on top of a pole held upright with four support wires. The sketch below shows two of these support wires.

**Kelly's Birdhouse**



Kelly calculated that she would need  $\sqrt{117}$  feet of wire for each support wire. Which of the following is closest to the value of  $\sqrt{117}$ ?

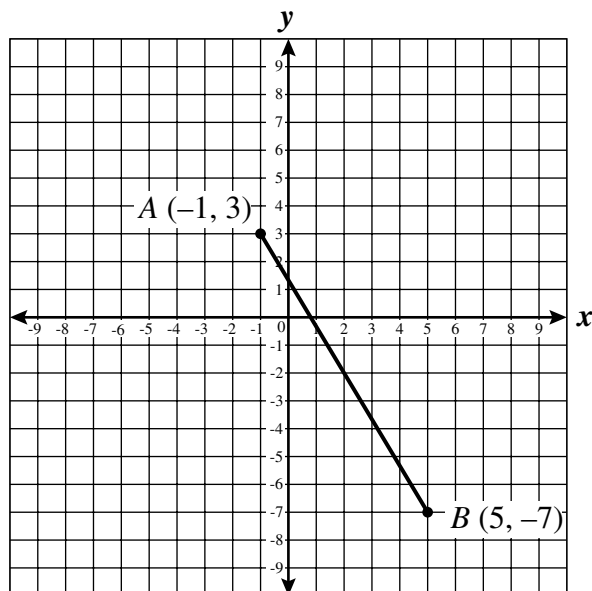
- A. 10
- B. 11
- C. 59
- D. 60

- 13 Which of the following is equivalent to the expression below?

$$(m + 1)(m + 5)$$

- A.  $2m + 6$
- B.  $m^2 + 5$
- C.  $m^2 + 5m + 6$
- D.  $m^2 + 6m + 5$

- 14 Line segment  $AB$  is plotted on the coordinate grid below.



What is the midpoint of line segment  $AB$ ?

- A.  $(3, -5)$
- B.  $(2, -2)$
- C.  $(-2, 2)$
- D.  $(-5, 3)$

**Question 15 is a short-answer question. Write your answer to this question in the box provided in your Student Answer Booklet. Do not write your answer in this test booklet. You may do your figuring in the test booklet.**

- 15** Cindy is the manager of a restaurant. She recorded the number of people who ate lunch at the restaurant each day for 5 days, as shown in the table below.

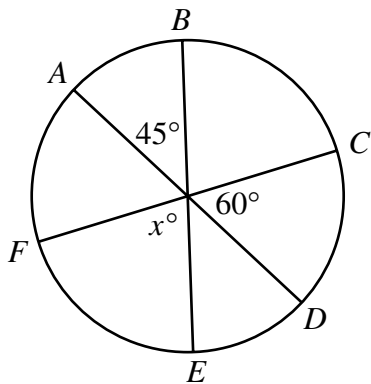
**Number of People Who Ate Lunch**

<b>Day</b>	<b>Number of People</b>
Monday	30
Tuesday	55
Wednesday	60
Thursday	30
Friday	75

What is the mean number of people per day who ate lunch at the restaurant for those 5 days?

Question 16 is a short-answer question. Write your answer to this question in the box provided in your Student Answer Booklet. Do not write your answer in this test booklet. You may do your figuring in the test booklet.

- 16 In the circle shown below,  $\overline{AD}$ ,  $\overline{BE}$ , and  $\overline{CF}$  are diameters.



What is the value, in degrees, of  $x$ ?

Question 17 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 17 in the space provided in your Student Answer Booklet.

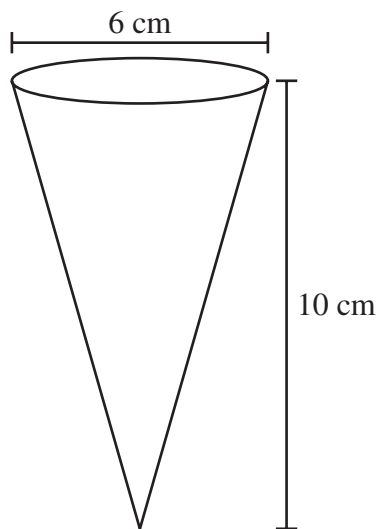
- 17 Rayburn High School has received price proposals from two companies for printing the school yearbook. The two proposals are shown below.
- Oxford Printing Company's proposal: a fixed fee of \$1200, plus \$15 per yearbook
  - Sunshine Printing Company's proposal: a fixed fee of \$1950, plus \$12 per yearbook
- a. If the school prints 50 yearbooks, which company's proposal will result in the lower total cost? Show or explain how you got your answer.
  - b. If the school prints 300 yearbooks, which company's proposal will result in the lower total cost? Show or explain how you got your answer.
  - c. For what number of yearbooks would the two companies' proposals for printing result in the same total cost? Show or explain how you got your answer.

Questions 18 and 19 are short-answer questions. Write your answers to these questions in the boxes provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

- 18 What is the value of the expression below?

$$3[1 + 2(1 + 2)]$$

- 19 A paper cup in the shape of a right circular cone has a height of 10 centimeters and a diameter of 6 centimeters, as shown in the drawing below.



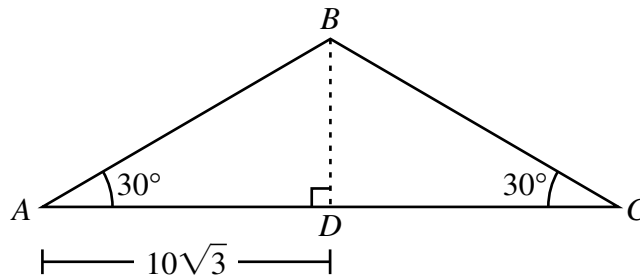
What is the volume, in cubic centimeters, of the cup?

Questions 20 and 21 are open-response questions.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF EACH QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 20 in the space provided in your Student Answer Booklet.

- 20 Isosceles triangle  $ABC$ , with height  $BD$ , is shown in the diagram below.



In the diagram,  $AD$  equals  $10\sqrt{3}$  units.

- What is  $DC$ , in units? Show or explain how you got your answer.
- What is  $m\angle ABD$ , in degrees? Show or explain how you got your answer.
- What is  $BD$ , in units? Show or explain how you got your answer.
- What is  $AB$ , in units? Show or explain how you got your answer.

Write your answer to question 21 in the space provided in your Student Answer Booklet.

- 21** The Patriots football team won the national championship in the 2003–2004 season. The table below shows the number of points scored by the Patriots in each of the team’s games during the 2003–2004 season.

**Points Scored  
by Game**

Game	Number of Points Scored
1st	0
2nd	31
3rd	23
4th	17
5th	38
6th	17
7th	19
8th	9
9th	30
10th	12
11th	23
12th	38
13th	12
14th	27
15th	21
16th	31

- a. What is the range of the number of points scored? Show or explain how you got your answer.
- b. Determine each of the following measures. In each case, show or explain how you got your answer.
- median of the number of points scored
  - upper extreme (maximum) of the number of points scored
  - lower extreme (minimum) of the number of points scored
  - median of the 8 highest numbers of points scored
  - median of the 8 lowest numbers of points scored
- c. In your Student Answer Booklet, draw a box-and-whisker plot that correctly represents the number of points scored. On the plot, label each of the measures that you found in part (b).

# Mathematics

## SESSION 2

You may use your reference sheet during this session.  
You may use a calculator during this session.



### DIRECTIONS

This session contains eighteen multiple-choice questions and three open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

- 22 Ann and the other students in her mathematics class took turns measuring each other's heights. They rounded the measurements to the nearest inch and tallied them in the chart below.

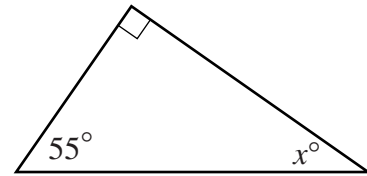
**Student Height Tally**

Height (in inches)	Number of Students
58	
63	
66	
67	
68	
69	
70	
71	
73	

Based on the data in the chart, what is the mode of the student heights in Ann's class?

- A. 67 inches
- B. 68 inches
- C. 69 inches
- D. 73 inches

- 23 A right triangle is shown below.

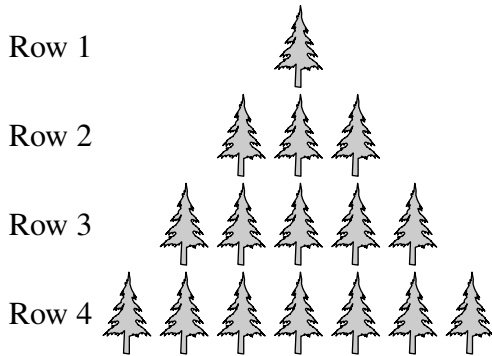


What is the value, in degrees, of  $x$ ?

- A. 25
  - B. 35
  - C. 45
  - D. 55
- 24 Steve correctly multiplied 10 by its multiplicative inverse. Which of the following is the result of his multiplication?
- A.  $\frac{1}{100}$
  - B.  $\frac{1}{10}$
  - C. 1
  - D. 10

- 25 A tree farmer planted 4 rows of trees in a triangular pattern. The first row has 1 tree, the second row has 3 trees, the third row has 5 trees, and the fourth row has 7 trees, as shown in the diagram below.

**Tree Farm Design**



How many **additional** trees will the farmer need to plant if he wants to continue this linear pattern and add 4 more rows to the triangle?

- A. 15
- B. 33
- C. 48
- D. 64

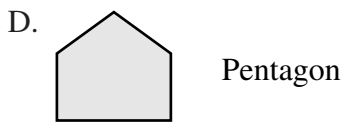
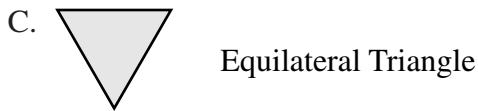
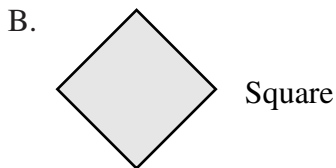
- 26 Andre has a dog pen in the shape of a rectangle.

- The perimeter of his dog pen is 60 feet.
- The length of his dog pen is twice its width.

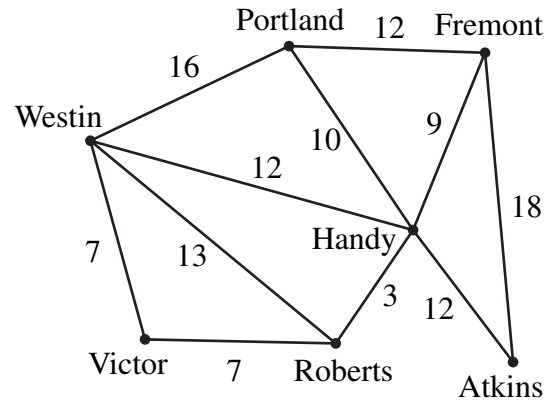
What is the area of Andre’s dog pen?

- A. 200 square feet
- B. 225 square feet
- C. 800 square feet
- D. 900 square feet

27 The shapes of some common traffic signs are shown below. Which of the following shapes does **not** have rotational symmetry?



28 The vertex-edge graph below shows the highway distances, in miles, between several different cities.



If Susan is traveling by car from Westin to Fremont, which of the following routes would be the shortest?

- A. Westin to Roberts to Handy to Fremont
- B. Westin to Portland to Fremont
- C. Westin to Victor to Roberts to Handy to Fremont
- D. Westin to Handy to Fremont

- 29 Cheryl's scores on 4 quizzes are shown below.

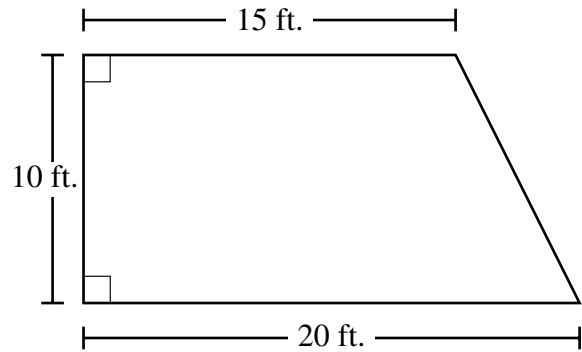
11, 11, 15, 22

She calculated the mean, median, mode, and range of her 4 quiz scores.

Cheryl's score was 13 on a 5th quiz. She then calculated the mean, median, mode, and range of her 5 quiz scores. Which of the following measures **decreased** in value when she included the 5th quiz score?

- A. mean
- B. median
- C. mode
- D. range

- 30 The figure below shows the dimensions of the floor of a room that Enrico wants to carpet in his basement.



What is the area of the floor?

- A. 150 sq. ft.
- B. 175 sq. ft.
- C. 200 sq. ft.
- D. 225 sq. ft.

Question 31 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 31 in the space provided in your Student Answer Booklet.

- 31 All the **natural number factors** of 28 are shown in the box below.

1, 2, 4, 7, 14, 28

The **proper factors** of any number include all its natural number factors **except** the number itself. All the **proper factors** of 28 are shown in the box below.

1, 2, 4, 7, 14

A **perfect number** is a number that is equal to the sum of its proper factors. The number 28 is a perfect number, as shown in the box below.

$$1 + 2 + 4 + 7 + 14 = 28$$

- List all the proper factors of the number 12.
- Show or explain why 12 is **not** a perfect number.
- There is only one perfect number that is less than 10. Find this number and write the equation that shows it is the sum of its proper factors.
- Is 105 a perfect number? Show or explain how you got your answer.

Mark your answers to multiple-choice questions 32 through 40 in the spaces provided in your Student Answer Booklet.

- 32 Dmitri, Gary, Priscilla, and Sonia collected bottles last week for recycling. The table below shows the number of bottles each of them collected.

**Bottles Collected per Person**

Name	Dmitri	Gary	Priscilla	Sonia
Number of Bottles	14	20	6	32

They want to display the number of bottles each of them collected as a percent of the total number of bottles collected.

Which of the following is the most appropriate type of data display for them to use?

- A. scatterplot
- B. circle graph
- C. stem-and-leaf plot
- D. box-and-whisker plot

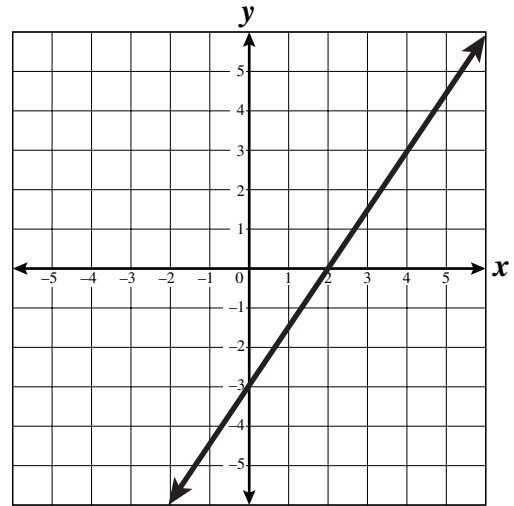
- 33 Joe works as a waiter in a restaurant.
- He earns a wage of \$5 per hour, plus any tips that he receives.
  - Last week he earned \$483 from wages and tips combined.
  - Last week he worked a total of 27 hours.

Which of the following is closest to the percent of Joe’s earnings last week that came from **tips**?

- A. 4%
- B. 20%
- C. 28%
- D. 72%

- 34 The top of a flat, circular lid on a jar of homemade jelly has a diameter of 6 centimeters. Which of the following is closest to the area of the top of the lid?
- A.  $18 \text{ cm}^2$
  - B.  $27 \text{ cm}^2$
  - C.  $36 \text{ cm}^2$
  - D.  $108 \text{ cm}^2$

- 35 A line is shown on the coordinate grid below.



Which of the following best represents the y-intercept of the line?

- A. 2
- B.  $\frac{3}{2}$
- C.  $-\frac{2}{3}$
- D. -3

**36** Jessie has an aquarium that is shaped like a right rectangular prism with the following dimensions:

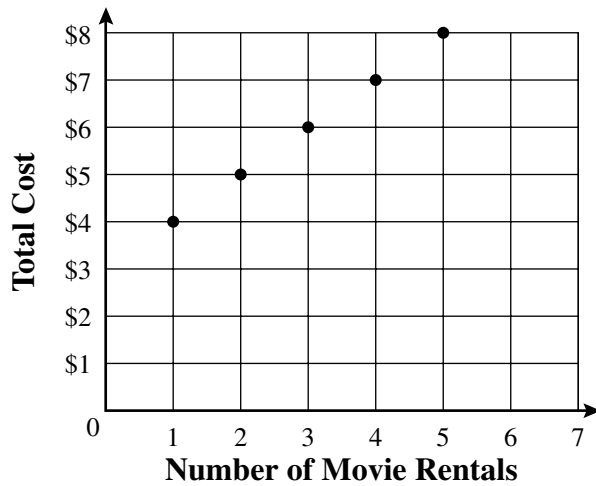
- height: 15 inches
- width: 20 inches
- length: 30 inches

What is the lateral surface area of a right rectangular prism with the dimensions of Jessie’s aquarium?

- A. 260 sq. in.
- B. 750 sq. in.
- C. 1500 sq. in.
- D. 9000 sq. in.

**37** Spencer graphed the total monthly costs of renting different numbers of movies at Video Central, as shown below.

**Total Monthly Cost of Movie Rentals**



If the linear pattern shown by the graph continues, what would be the total monthly cost of 15 movie rentals?

- A. \$15
- B. \$18
- C. \$45
- D. \$60

- 38 Which of the following values of  $x$  and  $y$  are solutions of the system of inequalities shown below?

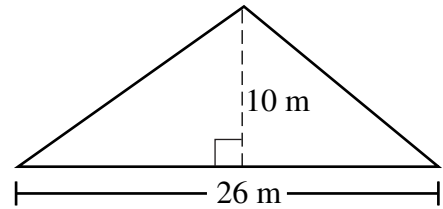
$$\begin{aligned}x + 3y &\leq 16 \\x + y &\geq 10\end{aligned}$$

- A.  $x = 2 ; y = 8$
- B.  $x = 9 ; y = 2$
- C.  $x = 1 ; y = 5$
- D.  $x = 7 ; y = 2$

- 39 A quadrilateral with sides measuring 5 inches, 7 inches, 12 inches, and 9 inches is drawn on a chalkboard. Which of the following could be the quadrilateral?

- A. a trapezoid
- B. a rectangle
- C. a rhombus
- D. a kite

- 40 What is the area of the triangle shown below?



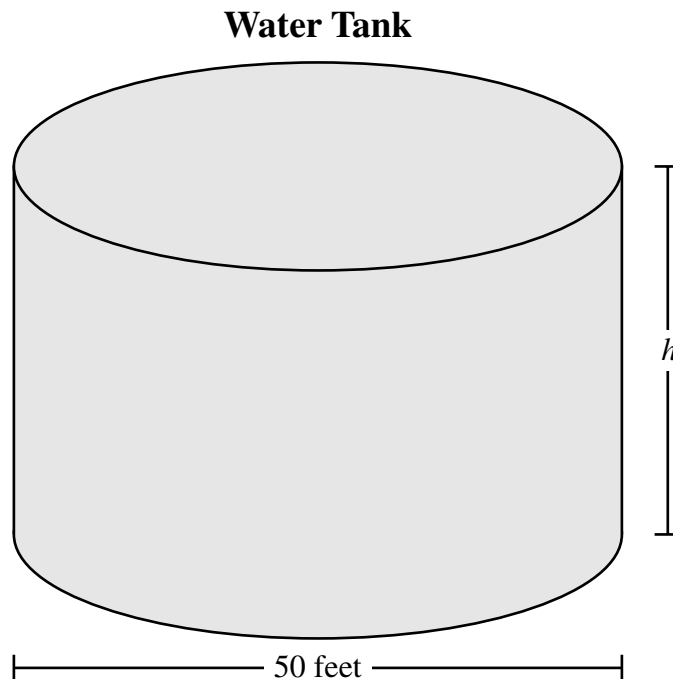
- A.  $260 \text{ m}^2$
- B.  $130 \text{ m}^2$
- C.  $65 \text{ m}^2$
- D.  $36 \text{ m}^2$

Questions 41 and 42 are open-response questions.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF EACH QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 41 in the space provided in your Student Answer Booklet.

- 41 The town of Brookville has a water tank that is shaped like a right circular cylinder with a diameter of 50 feet, as shown below.



- What is the radius, in feet, of the water tank? Show or explain how you got your answer.
- The water tank has a volume of 58,960 cubic feet. What is  $h$ , the height, in feet, of the water tank? Show or explain how you got your answer.

The town's planning board wants to build a new water tank to meet the needs of the town's growing population. The new water tank will be shaped like a right circular cylinder with the same height as the old water tank, but the volume of the new water tank will be 3 times the volume of the old water tank.

- Based on the town's plan, what would be the **diameter**, in feet, of the new water tank? Show or explain how you got your answer.

Write your answer to question 42 in the space provided in your Student Answer Booklet.

- 42 The formula shown in the box below is used to convert temperatures in Fahrenheit to temperatures in Celsius, where  $C$  represents the temperature in degrees Celsius, and  $F$  represents the temperature in degrees Fahrenheit.

$$\text{Formula: } C = \frac{5}{9}(F - 32)$$

- Determine  $C$  for each of the two temperatures below. Show your work in each case.
  - $F = 95$
  - $F = 5$
- Determine  $F$  when  $C = 25$ . Show your work.
- Solve the formula shown in the box above for  $F$  in terms of  $C$ . Show your work.
- For a given value of  $C$ , the value of  $F$  can be approximated by doubling  $C$  and adding 32.
  - Use this method to approximate  $F$  when  $C = 35$ . Show your work.
  - Use the formula you obtained in part (c) to determine  $F$  when  $C = 35$ . Show your work.
  - What is the difference, in degrees, between these two values of  $F$  when  $C = 35$ ? Show your work.

## Massachusetts Comprehensive Assessment System Grade 10 Mathematics Reference Sheet

### AREA FORMULAS

- square .....  $A = s^2$
- rectangle .....  $A = bh$
- parallelogram .....  $A = bh$
- triangle .....  $A = \frac{1}{2}bh$
- trapezoid .....  $A = \frac{1}{2}h(b_1 + b_2)$
- circle .....  $A = \pi r^2$

### LATERAL SURFACE AREA FORMULAS

- right rectangular prism .....  $LA = 2(hw) + 2(lh)$
- right circular cylinder .....  $LA = 2\pi rh$
- right circular cone .....  $LA = \pi r\ell$   
 ( $\ell$  = slant height)
- right square pyramid .....  $LA = 2s\ell$   
 ( $\ell$  = slant height)

### TOTAL SURFACE AREA FORMULAS

- cube .....  $SA = 6s^2$
- right rectangular prism .....  $SA = 2(lw) + 2(hw) + 2(lh)$
- sphere .....  $SA = 4\pi r^2$
- right circular cylinder .....  $SA = 2\pi r^2 + 2\pi rh$
- right circular cone .....  $SA = \pi r^2 + \pi r\ell$   
 ( $\ell$  = slant height)
- right square pyramid .....  $SA = s^2 + 2s\ell$   
 ( $\ell$  = slant height)

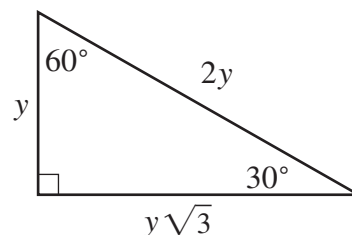
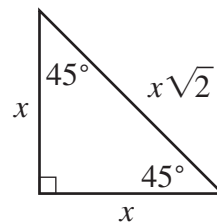
### VOLUME FORMULAS

- cube .....  $V = s^3$   
 ( $s$  = length of an edge)
- right rectangular prism .....  $V = lwh$   
 OR  
 $V = Bh$   
 ( $B$  = area of a base)
- sphere .....  $V = \frac{4}{3}\pi r^3$
- right circular cylinder .....  $V = \pi r^2h$
- right circular cone .....  $V = \frac{1}{3}\pi r^2h$
- right square pyramid .....  $V = \frac{1}{3}s^2h$

### CIRCLE FORMULAS

- $C = 2\pi r$
- $A = \pi r^2$

### SPECIAL RIGHT TRIANGLES



**Mathematics Retest**  
**November 2006 Released Items:**  
**Reporting Categories, Standards, and Correct Answers\***

Item No.	Page No.	Reporting Category	Standard	Correct Answer (MC/SA)*
1	37	<i>Number Sense and Operations</i>	10.N.2	D
2	37	<i>Patterns, Relations, and Algebra</i>	10.P.1	B
3	37	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	D
4	38	<i>Number Sense and Operations</i>	10.N.2	C
5	38	<i>Data Analysis, Statistics, and Probability</i>	10.D.2	D
6	39	<i>Number Sense and Operations</i>	10.N.2	D
7	39	<i>Number Sense and Operations</i>	10.N.4	A
8	40	<i>Patterns, Relations, and Algebra</i>	10.P.4	B
9	40	<i>Number Sense and Operations</i>	10.N.4	C
10	41	<i>Patterns, Relations, and Algebra</i>	10.P.2	C
11	42	<i>Patterns, Relations, and Algebra</i>	10.P.8	B
12	42	<i>Number Sense and Operations</i>	10.N.3	B
13	43	<i>Patterns, Relations, and Algebra</i>	10.P.3	D
14	43	<i>Geometry</i>	10.G.7	B
15	44	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	50
16	45	<i>Geometry</i>	10.G.3	75
17	46	<i>Patterns, Relations, and Algebra</i>	10.P.8	
18	47	<i>Number Sense and Operations</i>	10.N.2	21
19	47	<i>Measurement</i>	10.M.2	$30\pi$ cubic centimeters, or a decimal approximation of $30\pi$
20	48	<i>Geometry</i>	10.G.6	
21	49	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	
22	50	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	A
23	50	<i>Geometry</i>	10.G.5	B
24	50	<i>Number Sense and Operations</i>	10.N.1	C
25	51	<i>Patterns, Relations, and Algebra</i>	10.P.1	C
26	51	<i>Measurement</i>	10.M.1	A
27	52	<i>Geometry</i>	10.G.1	D
28	52	<i>Geometry</i>	10.G.11	D
29	53	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	A
30	53	<i>Measurement</i>	10.M.1	B
31	54	<i>Number Sense and Operations</i>	8.N.5	
32	55	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	B
33	56	<i>Patterns, Relations, and Algebra</i>	10.P.7	D
34	56	<i>Measurement</i>	10.M.1	B
35	56	<i>Patterns, Relations, and Algebra</i>	10.P.2	D
36	57	<i>Measurement</i>	10.M.2	C
37	57	<i>Patterns, Relations, and Algebra</i>	10.P.1	B
38	58	<i>Patterns, Relations, and Algebra</i>	10.P.8	B
39	58	<i>Geometry</i>	10.G.1	A
40	58	<i>Measurement</i>	10.M.1	B
41	59	<i>Measurement</i>	10.M.3	
42	60	<i>Patterns, Relations, and Algebra</i>	10.P.7	

\*Answers are provided here for multiple-choice items and short-answer items only. Each open response item has its own set of scoring guidelines, which allow for valid alternate interpretations and responses.