



## Massachusetts Comprehensive Assessment System Grade 8 Mathematics Reference Sheet

### CONVERSIONS

1 cup = 8 fluid ounces	1 inch = 2.54 centimeters	1 pound = 16 ounces
1 pint = 2 cups	1 meter $\approx$ 39.37 inches	1 pound $\approx$ 0.454 kilogram
1 quart = 2 pints	1 mile = 5280 feet	1 kilogram $\approx$ 2.2 pounds
1 gallon = 4 quarts	1 mile = 1760 yards	1 ton = 2000 pounds
1 gallon $\approx$ 3.785 liters	1 mile $\approx$ 1.609 kilometers	
1 liter $\approx$ 0.264 gallon	1 kilometer $\approx$ 0.62 mile	
1 liter = 1000 cubic centimeters		

### AREA (A) FORMULAS

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

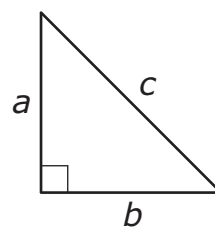
### CIRCLE FORMULAS

area. . . . .	$A = \pi r^2$
circumference. . . . .	$C = 2\pi r$
	OR
	$C = \pi d$

### VOLUME (V) FORMULAS

cube . . . . .	$V = s^3$
	(s = length of an edge)
sphere . . . . .	$V = \frac{4}{3}\pi r^3$
cone . . . . .	$V = \frac{1}{3}\pi r^2 h$
right circular cylinder . . . . .	$V = \pi r^2 h$
right prism . . . . .	$V = Bh$

### PYTHAGOREAN THEOREM



$$a^2 + b^2 = c^2$$