MASSACHUSETTS DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION

Massachusetts Comprehensive Assessment System
Grade 8 Mathematics Reference Sheet

PERIMETER FORMULAS

square . . . . . $P = 4s$

rectangle . . . . . $P = 2b + 2h$
OR
$P = 2l + 2w$

triangle . . . . . $P = a + b + c$

AREA 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 . . . . . $A = \pi r^2$

TOTAL SURFACE AREA FORMULAS

rectangular prism . . $SA = 2(lw) + 2(hw) + 2(lh)$

cylinder . . . . . $SA = 2\pi r^2 + 2\pi rh$

sphere . . . . . $SA = 4\pi r^2$

VOLUME FORMULAS

rectangular prism . . . . . $V = lwh$
OR
$V = Bh$
(B = area of a base)

cube . . . . . $V = s^3$
(s = length of an edge)

cylinder . . . . . $V = \pi r^2 h$

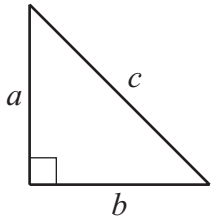
sphere . . . . . $V = \frac{4}{3}\pi r^3$

CIRCLE FORMULAS

$C = 2\pi r$
OR
$C = \pi d$

$A = \pi r^2$

PYTHAGOREAN THEOREM



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