Formulas and conversions that you may need to work questions on this test are found below. You may refer back to this page at any time during the mathematics test.

2015
Grade 4

Standard Conversions

1 yard (yd) = 3 feet (ft)
1 foot = 12 inches (in.)

1 pound (lb) = 16 ounces (oz.)

1 gallon (gal) = 4 quarts (qt)
1 quart = 2 pints (pt)
1 pint = 2 cups (c)

Metric Conversions

1 kilometer (km) = 1,000 meters (m)
1 meter = 100 centimeters (cm)

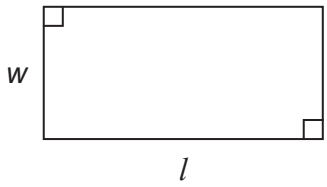
1 kilogram (kg) = 1,000 grams (g)

1 liter (L) = 1,000 milliliters (mL)

Time Conversions

1 year (yr) = 12 months (mo)
1 year = 52 weeks (wk)
1 year = 365 days
1 week = 7 days
1 day = 24 hours (hr)
1 hour = 60 minutes (min)
1 minute = 60 seconds (sec)

Rectangle



Area = length × width
$A = l \times w$

Perimeter = length + length + width + width
$P = l + l + w + w$

Formulas and conversions that you may need to work questions on this test are found below. You may refer back to this page at any time during the mathematics test.

2015
Grade 5

Standard Conversions

1 mile (mi) = 1,760 yards (yd)
1 mile = 5,280 feet (ft)
1 yard (yd) = 3 feet (ft)
1 foot = 12 inches (in.)

1 ton (T) = 2,000 pounds (lb)
1 pound = 16 ounces (oz.)

1 gallon (gal) = 4 quarts (qt)
1 quart = 2 pints (pt)
1 pint = 2 cups (c)
1 cup = 8 fluid ounces (fl oz.)

Metric Conversions

1 kilometer (km) = 1,000 meters (m)
1 meter = 100 centimeters (cm)
1 centimeter = 10 millimeters (mm)

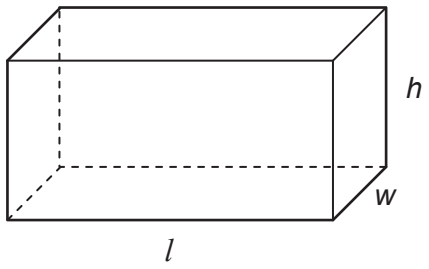
1 kilogram (kg) = 1,000 grams (g)

1 liter (L) = 1,000 milliliters (mL)

Time Conversions

1 century = 10 decades
1 decade = 10 years (yr)
1 year (yr) = 12 months (mo)
1 year = 52 weeks (wk)
1 year = 365 days
1 week = 7 days
1 day = 24 hours (hr)
1 hour = 60 minutes (min)
1 minute = 60 seconds (sec)

Rectangular Prism



Volume = length × width × height
$V = l \times w \times h$

Volume = area of the base × height
$V = B \times h$

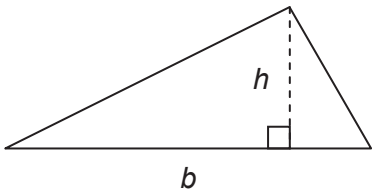
Volume = area of the base × width
$V = B \times w$

Volume = area of the base × length
$V = B \times l$

Formulas that you may need to work questions on this test are found below.
You may refer back to this page at any time during the mathematics test.

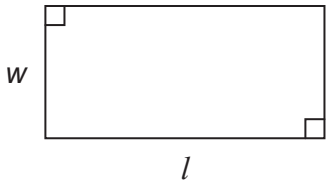
2015
Grade 6

Triangle



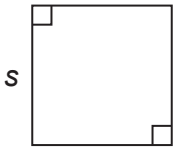
$A = \frac{1}{2}bh$

Rectangle



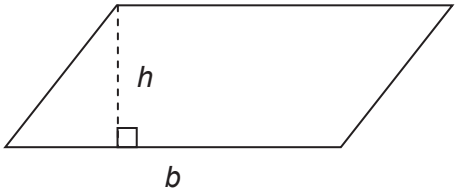
$A = lw$

Square



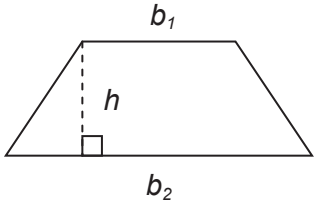
$A = s^2$

Parallelogram



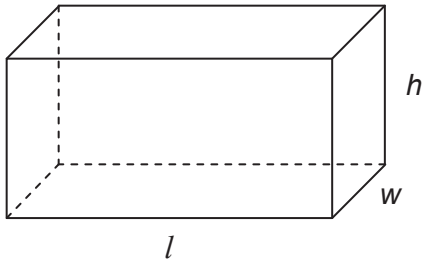
$A = bh$

Trapezoid



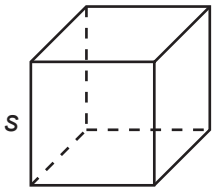
$A = \frac{1}{2}h(b_1 + b_2)$

Rectangular Prism



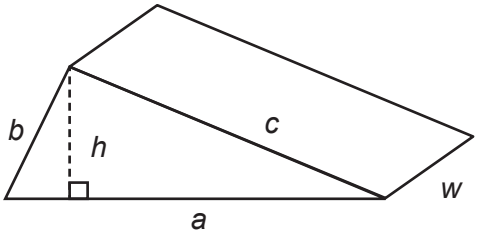
$V = lwh$ $SA = 2lw + 2lh + 2wh$

Cube



$V = s \cdot s \cdot s$ $SA = 6s^2$

Triangular Prism



$SA = ah + aw + bw + cw$

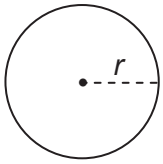
Formulas that you may need to work questions on this test are found below.
You may refer back to this page at any time during the mathematics test.
You may use calculator π or the number 3.14.

2015
Grade 7

Simple Interest

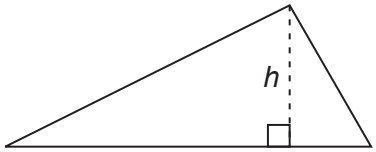
$I = Prt$

Circle



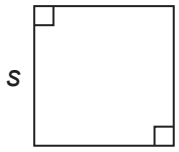
$C = 2\pi r$ $A = \pi r^2$

Triangle



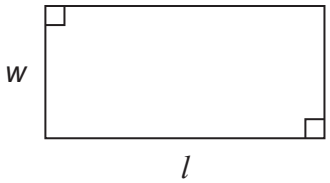
$A = \frac{1}{2}bh$

Square



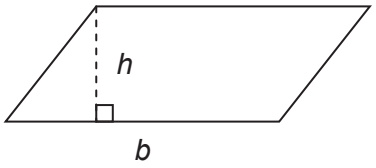
$A = s^2$

Rectangle



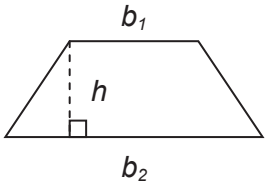
$A = lw$ $P = 2l + 2w$

Parallelogram



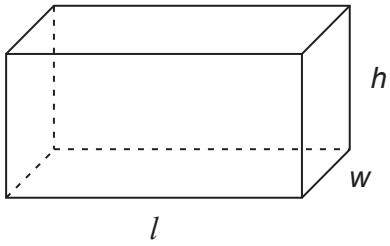
$A = bh$

Trapezoid



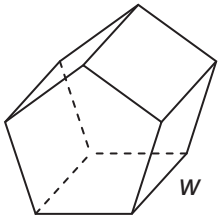
$A = \frac{1}{2}h(b_1 + b_2)$

Rectangular Prism



$V = lwh$ $SA = 2lw + 2lh + 2wh$

Polygonal Prism



$V = Bw$, where B = area of the base
$SA = Pw + 2B$, where P = perimeter of base

Formulas that you may need to work questions on this test are found below.
You may refer back to this page at any time during the mathematics test.
You may use calculator π or the number 3.14.

2015
Grade 8

Exponential Properties

$$a^m \cdot a^n = a^{m+n}$$

$$(a^m)^n = a^{m \cdot n}$$

$$\frac{a^m}{a^n} = a^{m-n}$$

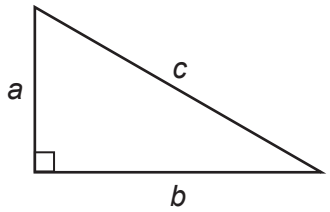
$$a^{-1} = \frac{1}{a}$$

Algebraic Equations

Slope: $m = \frac{y_2 - y_1}{x_2 - x_1}$

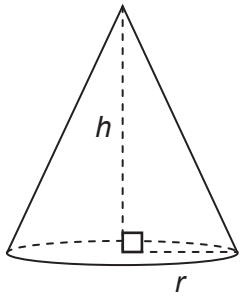
Slope-Intercept Form: $y = mx + b$

Pythagorean Theorem



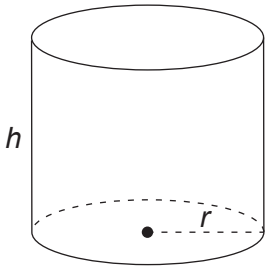
$$a^2 + b^2 = c^2$$

Cone



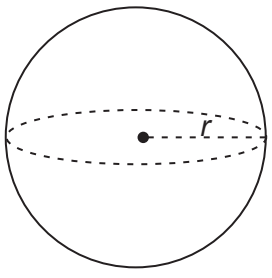
$$V = \frac{1}{3}\pi r^2 h$$

Cylinder



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

Sphere



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