Definitions and Formulas
for Core Academic Skills Assessment—Mathematics

Definitions

$>$	is greater than	$\triangle ABC$	triangle ABC	$A \cup B$	set A union set B
$<$	is less than	$\overleftrightarrow{AB}$	line AB	$A \cap B$	set A intersect set B
π	≈ 3.14			$\emptyset$	empty set
$\angle$	angle	$\overline{AB}$	line segment AB		
$m\angle A$	the measure of angle A	AB	the length of line segment AB		

Conversions for Units of Measurement

	U.S. Standard	Metric	Time
Distance	12 inches = 1 foot 3 feet = 1 yard 5280 feet = 1 mile	1 kilometer = 1000 meters 1 meter = 100 centimeters 1 centimeter = 10 millimeters 1 inch = 2.54 centimeters	1 minute = 60 seconds 1 hour = 60 minutes 1 day = 24 hours
Volume (liquid)	1 gallon = 4 quarts 1 quart = 32 ounces	1 liter = 1000 milliliters 1 cubic centimeter = 1 milliliter 1 quart $\approx$ 0.95 liters	
Mass	1 pound = 16 ounces 1 ton = 2000 pounds	1 gram = 1000 milligrams 1 kilogram = 1000 grams 2.2 pounds $\approx$ 1 kilogram	

Formulas

Note: Not all formulas necessary are listed, nor are all formulas listed used on this test.

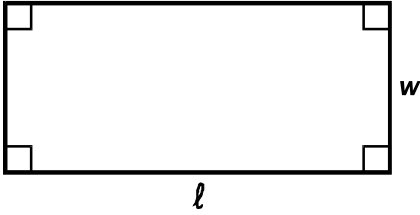|	
Simple interest	$A = P \times r \times t$
Compound interest	$A = P(1 + r)^t$
Midpoint	$\left(\dfrac{x_1 + x_2}{2}, \dfrac{y_1 + y_2}{2} \right)$
Distance	$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
Pythagorean theorem	$c^2 = a^2 + b^2$
$_nP_r$	$\dfrac{n!}{(n - r)!}$
$_nC_r$	$\dfrac{n!}{(n - r)!r!}$

Formulas (continued)

Rectangle

Area $= \ell w$

Perimeter $= 2\ell + 2w$

Triangle
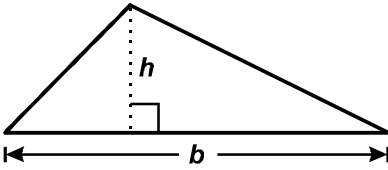
Area $= \frac{1}{2} bh$

Circle
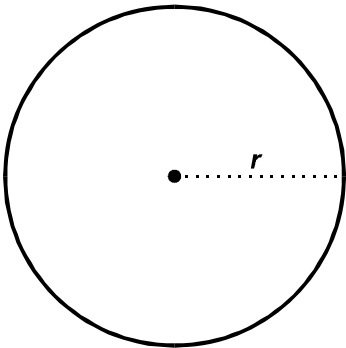
Area $= \pi r^2$

Circumference $= 2\pi r$

Sphere
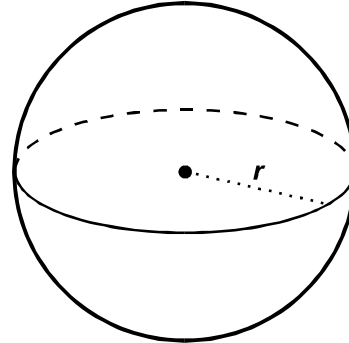
Surface area $= 4\pi r^2$

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

Right cylinder
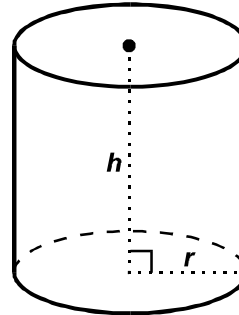
Surface area $= 2\pi rh + 2\pi r^2$

Volume $= \pi r^2 h$

Rectangular solid
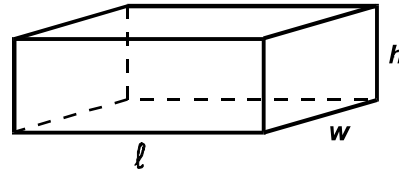
Surface area $= 2\ell w + 2\ell h + 2wh$

Volume $= \ell wh$

End of Definitions and Formulas