Definitions and Formulas
for Pre-service Academic Performance 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			$\varnothing$	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 inch = 2.54 centimeters	1 kilometer = 1000 meters 1 meter = 100 centimeters 1 centimeter = 10 millimeters	1 minute = 60 seconds 1 hour = 60 minutes 1 day = 24 hours
Volume (liquid)	1 gallon = 4 quarts 1 quart = 32 ounces 1 quart $\approx$ 0.95 liters	1 liter = 1000 milliliters 1 cubic centimeter = 1 milliliter	
Mass	1 pound = 16 ounces 1 ton = 2000 pounds 2.2 pounds $\approx$ 1 kilogram	1 gram = 1000 milligrams 1 kilogram = 1000 grams	

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 $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

Distance $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

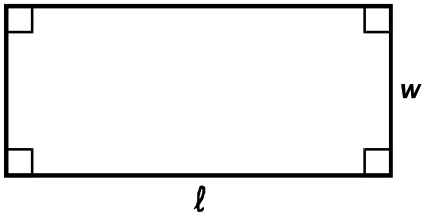
Pythagorean theorem $c^2 = a^2 + b^2$

${}_nP_r$ $\frac{n!}{(n-r)!}$

${}_nC_r$ $\frac{n!}{(n-r)!r!}$

Formulas (continued)

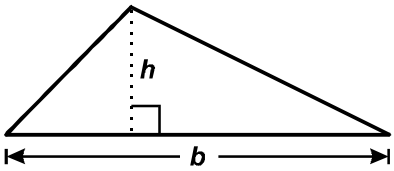
Rectangle



Area = ℓw

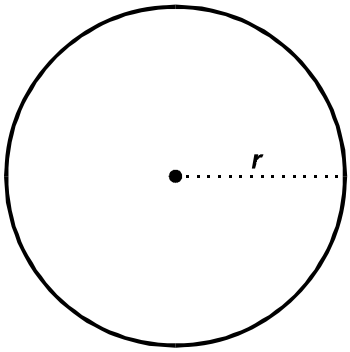
Perimeter = $2\ell + 2w$

Triangle



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

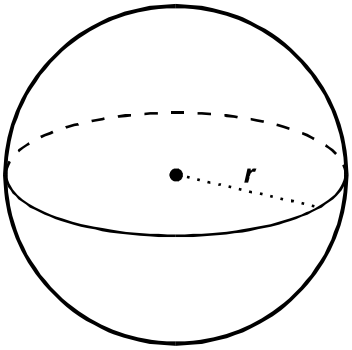
Circle



Area = πr^2

Circumference = $2\pi r$

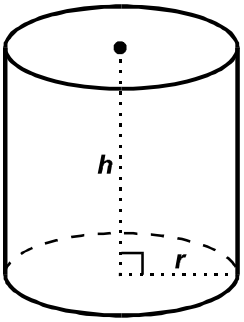
Sphere



Surface area = $4\pi r^2$

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

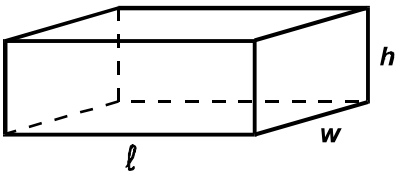
Right cylinder



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 = ℓwh

End of Definitions and Formulas