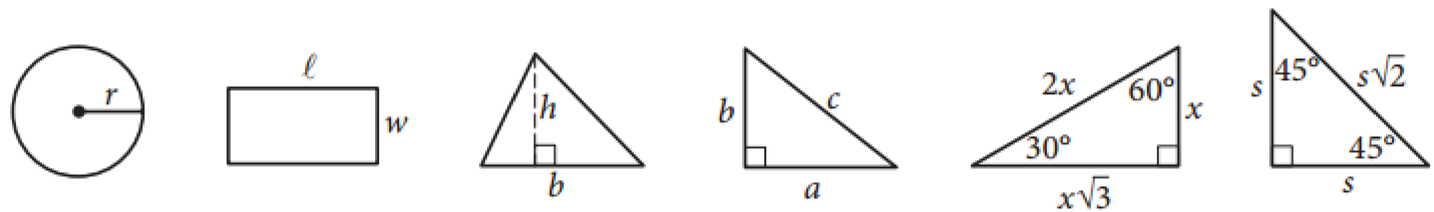
These references are automatically given to you to use on the SAT. Be sure you understand how to use each formula/concept.

REFERENCE



$A = \pi r^2$

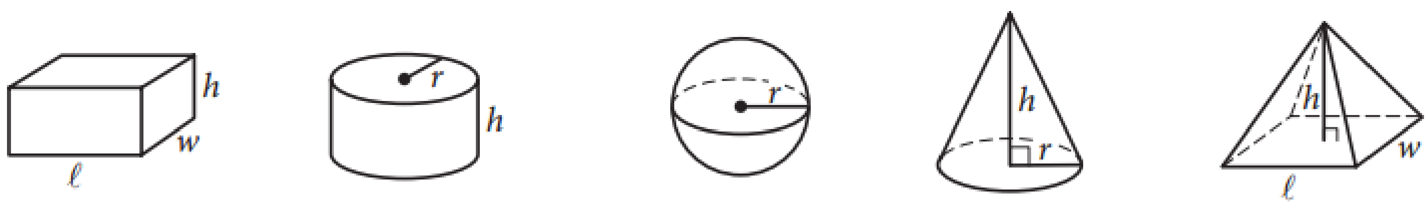
$C = 2\pi r$

$A = \ell w$

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

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

Special Right Triangles



$V = \ell wh$

$V = \pi r^2 h$

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

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

$V = \frac{1}{3}\ell wh$

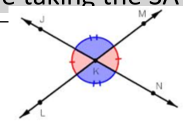
The number of degrees of arc in a circle is 360.

The number of radians of arc in a circle is 2π.

The sum of the measures in degrees of the angles of a triangle is 180.

Formulas you should study and understand before taking the SAT:

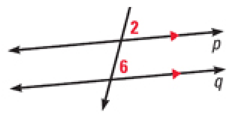
Vertical (Opposite) Angles:



Linear Pairs: Two supplementary angles that together form a line.

Corresponding Angles:

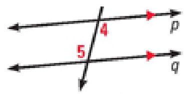
If two parallel lines are cut by a transversal, then the pairs of corresponding angles are congruent.



$\angle 2 \cong \angle 6$

Alternate Interior Angles:

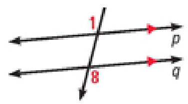
If two parallel lines are cut by a transversal, then the pairs of alternate interior angles are congruent.



$\angle 4 \cong \angle 5$

Alternate Exterior Angles:

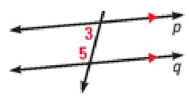
If two parallel lines are cut by a transversal, then the pairs of alternate exterior angles are congruent.



$\angle 1 \cong \angle 8$

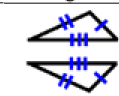
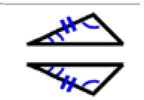
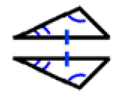
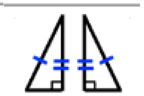
Same Side Interior Angles:

If two parallel lines are cut by a transversal, then the pairs of consecutive interior angles are supplementary.



$\angle 3$ and $\angle 5$ are supplementary.

Triangle Congruence:

Congruence	Diagram
SSS	
SAS	
ASA	
AAS	
HL	

CPCTC: Corresponding Parts of Congruent Triangles are Congruent

Triangle Similarity:

AA Similarity Postulate

SSS Similarity Theorem

SAS Similarity Theorem

*Corresponding sides are proportional, and corresponding angles are congruent.

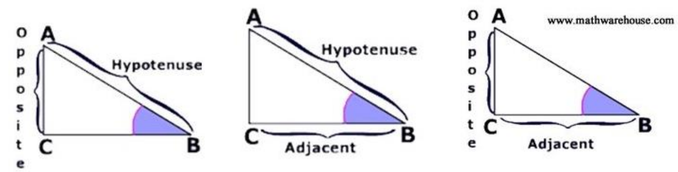
sum → add

difference → subtract

product → multiply

quotient → divide

$\sin(B) = \frac{opposite}{hypotenuse}$ $\cos(B) = \frac{adjacent}{hypotenuse}$ $\tan(B) = \frac{opposite}{adjacent}$



mean ↔ average

median ↔ middle

mode ↔ most

range ↔ difference

$\frac{part}{whole} = \frac{\%}{100}$

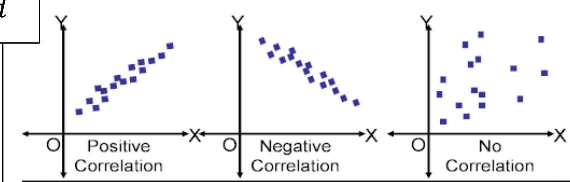
Arc Length: $S = \frac{\theta°}{360°}\pi d$

$$p(event) = \frac{number\ of\ favorable\ outcomes}{number\ of\ total\ outcomes}$$

$\pi = 180°$

FOIL: $(a+b)(c+d) = ac + ad + bc + bd$

SCATTER PLOT EXAMPLES



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

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

Quadratic Functions:

Solve for x when $ax^2 + bx + c = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Vertex Form: $y = a(x-h)^2 + k$, where (h, k) is the vertex of the parabola.

Linear Functions:

$$y = mx + b$$

$$m = slope = rate\ of\ change = \frac{y_2 - y_1}{x_2 - x_1}$$

$$b = original\ value = y - intercept$$

Same Slopes → Parallel Lines

Opposite Reciprocal Slopes → Perpendicular Lines

$i = \sqrt{-1}$

$i^2 = -1$

$i^3 = -i$

$i^4 = 1$

$\left(\sqrt[n]{a}\right)^m = a^{\frac{m}{n}}$

Exponent Properties:

$a^0 = 1$ $a^{-n} = \frac{1}{a^n}$ $a^m \cdot a^n = a^{m+n}$

$\frac{a^m}{a^n} = a^{m-n}$ $(ab)^n = a^n b^n$ $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$

$(a^m)^n = a^{mn}$ $\frac{1}{a^{-n}} = a^n$

Equation of a Circle: $(x-h)^2 + (y-k)^2 = r^2$, where (h, k) is the center and r is the radius.

Exponential Functions: $y = ab^x$, where $a = original\ value$, $b = growth\ or\ decay\ factor$. If $0 < b < 1$, then the function is decaying. If $b > 1$, then the function is growing. (If $b = 0.2$, then there is 80% decay. If $b = 1.2$, then there is 20% growth.)