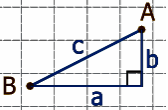


SAT Math Formulas

Algebra

Slope		$m = \frac{y_2 - y_1}{x_2 - x_1}$
Slope-intercept form		$y = mx + b$
$a^2 - b^2 =$		$(a - b)(a + b)$
$(a + b)^2 =$		$a^2 + 2ab + b^2$
Distance formula with Pythagorean Theorem 		$c = \sqrt{a^2 + b^2}$ (Using $a^2 + b^2 = c^2$)

Quadratics

Factored Form		$y = a(x - p)(x - q)$
x-intercepts		$x = p$ or $x = q$
Vertex		$x = \frac{p + q}{2}$

Vertex Form		$y = a(x - h)^2 + k$
Vertex		(h, k)
x-intercepts		$x = h \pm \sqrt{\frac{-k}{a}}$

Standard Form		$y = ax^2 + bx + c$
Vertex		$x = \frac{-b}{2a}$
x-intercepts	1) 2)	1) Try factoring 2) $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
When are there 2 real x-intercepts?		$b^2 - 4ac > 0$
When is there 1 real x-intercepts?		$b^2 - 4ac = 0$
When are there no real x-intercepts?		$b^2 - 4ac < 0$

Triangles / Trigonometry / Circles

$\sin \theta =$		Opp / Hyp
$\cos \theta =$		Adj / Hyp
$\tan \theta =$		Opp / Adj
Pythagorean triples (2 sets)	- - - -	3 - 4 - 5 5 - 12 - 13
Equation for a circle		$(x - h)^2 + (y - k)^2 = r^2$
Arc length =		$\frac{\theta}{360} 2\pi r$
Sector area =		$\frac{\theta}{360} \pi r^2$
30° to radians		$30^\circ = \frac{\pi}{6}$ radians
45° to radians		$45^\circ = \frac{\pi}{4}$ radians

Exponents / Radicals

$x^a x^b =$		x^{a+b}
$\frac{x^a}{x^b} =$		x^{a-b}
$(x^a)^b =$		x^{ab}
$(xy)^a =$		$x^a y^a$
$x^{-a} =$		$\frac{1}{x^a}$
$x^0 =$		1 (if $x \neq 0$)
$x^{a/b} =$		$(\sqrt[b]{x})^a$
$\sqrt{xy} =$		$\sqrt{x} \sqrt{y}$
$\sqrt{\frac{x}{y}} =$		$\frac{\sqrt{x}}{\sqrt{y}}$

Miscellaneous

$i^2 =$		-1
Average (mean) =		sum / # of values
Relationship of distance, rate, and time		$d = rt$