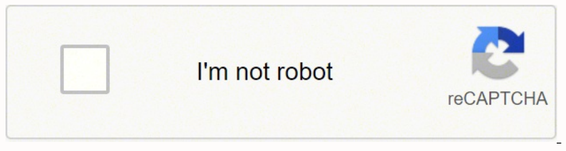

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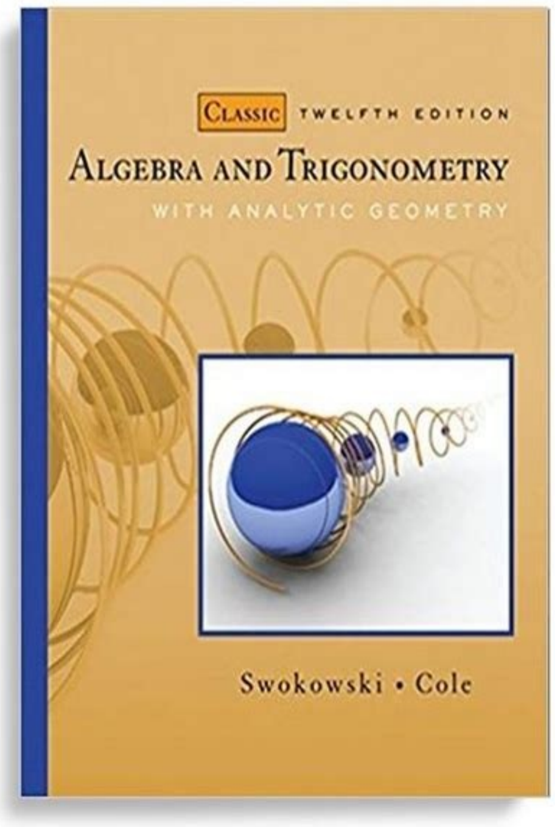

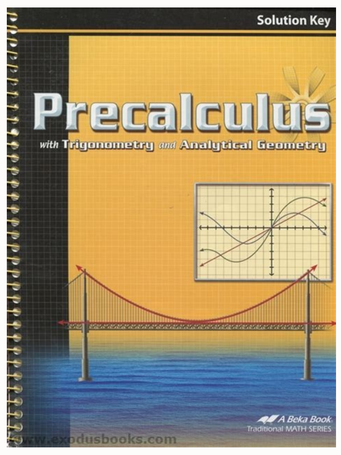

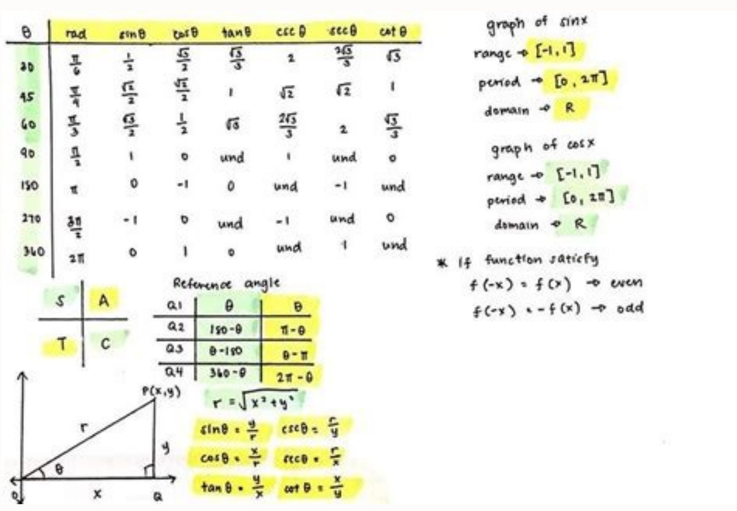

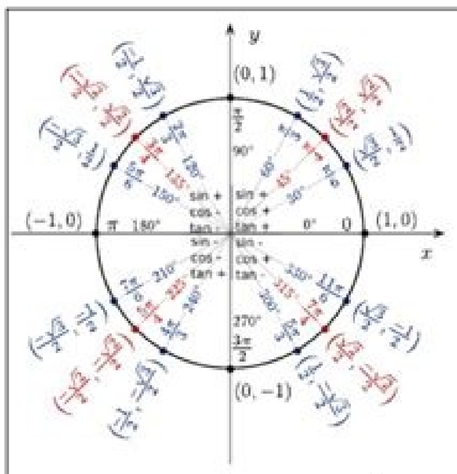

$Sector\ area = \frac{1}{2} r\Theta$ $Angular\ speed = \frac{\Theta}{time}$ $Linear\ speed = \frac{r\Theta}{time}$ $Arc\ length = r\Theta$	$\sin\Theta = \frac{opp}{hyp}$ $csc\Theta = \frac{hyp}{opp}$ $\cos\Theta = \frac{adj}{hyp}$ $sec\Theta = \frac{hyp}{adj}$ $\tan\Theta = \frac{opp}{adj}$ $\cot\Theta = \frac{adj}{opp}$ **Deg/Rad convert** $R = \frac{D \cdot \Pi}{180^0}$ $D = \frac{180^0}{\Pi}$
Law of Sines (AAS, ASA) $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$	**Law of cosines (SSS, SAS)** $a^2 = b^2 + c^2 - 2bc\cos A$
Area for SAS $A = 0.5bc\sin A$	**Area for AAS, ASA** $A = 0.5a^2 \frac{\sin B \sin C}{\sin A}$
Area for SSS:	$Area = \sqrt{(s(s-a)(s-b)(s-c))}$ $s = \frac{1}{2}(a+b+c)$

Graphing trig functions:
$y = a\sin(bx+c)+d$
$a \neq 0 : b \neq 0$
Amplitude: $|a|$
Period: $\frac{2\Pi}{b}$
Frequency: $\frac{1}{period}$
Phase shift: $-\frac{c}{|b|}$
Midline: $y = d$

Ambiguous case (SSA):
$h = b\sin A$
$a = opp$
$b = adj$

If a is obtuse:
$a \leq b$
= No solution
$a > b$
= One solution

If a is acute:
$a < b$ $a < h$
=No solution

$a < b$ $a = h$
=One solution

$a < b$ $a > h$
=Two solutions

$a \geq b$
=One solution

Half-Angle Identities

$\sin\frac{\Theta}{2} = \pm\sqrt{\left(\frac{1-\cos\Theta}{2}\right)}$	$\tan\frac{\Theta}{2} = \pm\sqrt{\left(\frac{1-\cos\Theta}{1+\cos\Theta}\right)}$
$\cos\frac{\Theta}{2} = \pm\sqrt{\left(\frac{1+\cos\Theta}{2}\right)}$	$\tan\frac{\Theta}{2} = \frac{1-\cos\Theta}{\sin\Theta}$
	$\tan\frac{\Theta}{2} = \frac{\sin\Theta}{1+\cos\Theta}$

Pythagorean identitiess

$\sin^2\Theta + \cos^2\Theta = 1$	$\tan^2\Theta + 1 = sec^2\Theta$	$\cot^2\Theta + 1 = csc^2\Theta$

Confunction identities

$\sin\Theta = \cos\left(\frac{\Pi}{2} - \Theta\right)$	$\tan\Theta = \cot\left(\frac{\Pi}{2} - \Theta\right)$	$sec\Theta = csc\left(\frac{\Pi}{2} - \Theta\right)$
$\cos\Theta = \sin\left(\frac{\Pi}{2} - \Theta\right)$	$\cot\Theta = \tan\left(\frac{\Pi}{2} - \Theta\right)$	$csc\Theta = sec\left(\frac{\Pi}{2} - \Theta\right)$

Odd-Even Identities

$\sin(-\Theta) = -\sin\Theta$	$\cos(-\Theta) = \cos\Theta$	$\tan(-\Theta) = -\tan\Theta$
$csc(-\Theta) = -csc\Theta$	$sec(-\Theta) = sec\Theta$	$\cot(-\Theta) = -\cot\Theta$

Sum identities

$\cos(a+b) = \cos a\cos b - \sin a\sin b$
$\sin(a+b) = \sin a\cos B + \cos a\sin B$
$\tan(a+b) = \frac{\tan a + \tan b}{1 - \tan a\tan b}$

Difference identities

$\cos(a-b) = \cos a\cos b + \sin a\sin b$
$\sin(a-b) = \sin a\cos b - \cos a\sin b$
$\tan(a-b) = \frac{\tan a - \tan b}{1 + \tan a\tan b}$

Power-Reducing Identities

$\sin^2\Theta = \frac{1-\cos 2\Theta}{2}$	$\cos^2\Theta = \frac{1+\cos 2\Theta}{2}$	$\tan^2\Theta = \frac{1-\cos 2\Theta}{1+\cos 2\Theta}$

Binomial probability
$Prob = {}_nC_x p^x q^{n-x}$ n independent trials, p probability of success, $q = 1 - p$

Double angle identities

$\sin 2\Theta = 2\sin\Theta\cos\Theta$	$\cos 2\Theta = \cos^2\Theta - \sin^2\Theta$
	$\cos 2\Theta = 2\cos^2\Theta - 1$
$\tan 2\Theta = \frac{2\tan\Theta}{1-\tan^2\Theta}$	$\cos 2\Theta = 1 - 2\sin^2\Theta$

Sigma notation	nth term of arith. seq.	Sum of arith. series	Sum of arith. series	nth term of geo. seq.

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