

SOLT CAH TOA Algebra II



MC Strategy!

Equation

$10 \rightarrow x$
 $15 \rightarrow y$

y_1
 y_2 Intersect

Profit = Revenue - Cost

Sec $\theta = \frac{1}{\cos \theta}$ Unit circle
(cos, sin)
Csc $\theta = \frac{1}{\sin \theta}$
Cot $\theta = \frac{1}{\tan \theta}$

Common Core High School Math Reference Sheet
(Algebra I, Geometry, Algebra II)

Pythagorean Identity
 $\sin^2 \theta + \cos^2 \theta = 1$

$i^2 = -1$

Factors and Zeros
(x-a) factor
a zero

- 1 inch = 2.54 centimeters
- 1 meter = 39.37 inches
- 1 mile = 5280 feet
- 1 mile = 1760 yards
- 1 mile = 1.609 kilometers

- 1 kilometer = 0.62 mile
- 1 pound = 16 ounces
- 1 pound = 0.454 kilograms
- 1 kilogram = 2.2 pounds
- 1 ton = 2000 pounds

- 1 cup = 8 fluid ounces
- 1 pint = 2 cups
- 1 quart = 2 pints
- 1 gallon = 4 quarts
- 1 gallon = 3.785 liters
- 1 liter = 0.264 gallon
- 1 liter = 1000 cubic centimeters

Normal distribution
normal cdf

Confidence interval
mean \pm 2(standard deviation)
margin of error = 2(standard deviation)

Inverse
Switch x and y

FORMULAS

Triangle	$A = \frac{1}{2}bh$	Pythagorean Theorem	$a^2 + b^2 = c^2$
Parallelogram	$A = bh$	Quadratic Formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Circle	$A = \pi r^2$	Arithmetic Sequence	$a_n = a_1 + (n-1)d$
Circle	$C = \pi d$ or $C = 2\pi r$	Geometric Sequence	$a_n = a_1 r^{n-1}$
General Prisms	$V = Bh$	Geometric Series	$S_n = \frac{a_1 - a_1 r^n}{1-r}$ where $r \neq 1$
Cylinder	$V = \pi r^2 h$	Radians	1 radian = $\frac{180}{\pi}$ degrees
Sphere	$V = \frac{4}{3}\pi r^3$	Degrees	1 degree = $\frac{\pi}{180}$ radians
Cone	$V = \frac{1}{3}\pi r^2 h$	Exponential Growth/Decay	$A = A_0 e^{k(t-t_0)} + B_0$
Pyramid	$V = \frac{1}{3}Bh$		

PS
1
4
9
16
25
36
49
64
81
100

Exponential Regression
Exp Reg

Divide
 Multiply
 Subtract \leftarrow Keep change change
 Bring Down

Even
 $f(x) = f(-x)$
 Symmetric to y-axis

odd
 $f(-x) = -f(x)$
 Symmetric to origin

~~$\frac{(x-v)^2}{4p} = y-t$~~
 cross multiply \odot isolate y
 $y = \frac{1}{4p}(x-v)^2 + t$

$(a+b)^2 = a^2 + 2ab + b^2$
 or
 box method

Inverse
 41:
 42: or switch x and y
 43: x

Radicals are fractional exponents ^{Power}/_{Root}
 Get rid of parentheses
 Negative Exponents are fractions
 Clean it up \leftarrow multiply divide radical

Recursive

$a_1 =$
 $a_n = a_{n-1}$
 \downarrow
 previous term

$\begin{pmatrix} x \\ y \\ z \end{pmatrix} = A^{-1}B$
 Matrix Method
 3x3

Average rate of change
 $\frac{f(b) - f(a)}{b - a}$

Factor

GCF
 DOTs
 Trinomials/Bridge
 Grouping
 (Can you factor further?)
 SOAP Cubes
 $(a \ b) (a^2 \ ab \ b^2)$

amps in freq x shift
 $p = \frac{2\pi}{f} \quad f = \frac{2\pi}{p}$
 $mid = \frac{min + max}{2}$

$P(A \cup B) = P(A) + P(B) - P(A \cap B)$
 $P(A \cap B) = P(A) + P(B) - P(A \cup B)$

Independence

$P(A \cap B) = P(A) \cdot P(B)$
 $P(A) = P(A|B)$

$A = P(1 \pm r)^t$

$A = P(1 \pm \frac{r}{n})^{nt}$ Compounding

$A = Pe^{rt}$ Continuous

$A = P(\frac{1}{2})^{\frac{t}{H}}$ Half Life

$A = P(1 \pm r)^{\frac{t}{n}}$ Irregular Time

$A = P(1 \pm r)^{\frac{t}{n}}$ double time $\frac{1}{n}$
 (converting rate: $(1 \pm r)$)

Mortgages

$P = T - D$
 To find down payment, find P!

$f(x) + a$ up
 $f(x) - a$ down
 $f(x+a)$ left
 $f(x-a)$ right

~~Radians~~ Radians \rightarrow Degrees
 $\cdot \frac{180}{\pi}$

Graphing Functions

Scale $\geq \frac{max}{\# \text{ of boxes}}$