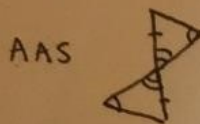
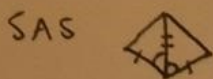
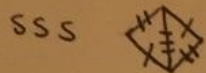
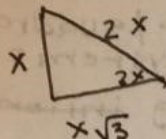
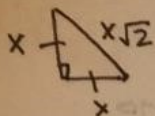


Triangles



Trigonometry

Special right Δ's



45-45-90

30-60-90

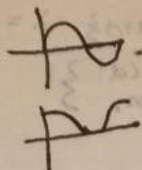
$\sin = \frac{\text{opp}}{\text{hyp}}$

$\cos = \frac{\text{adj}}{\text{hyp}}$

$\tan = \frac{\text{opp}}{\text{adj}}$

$y = a \sin b\theta$

$y = a \cos b\theta$

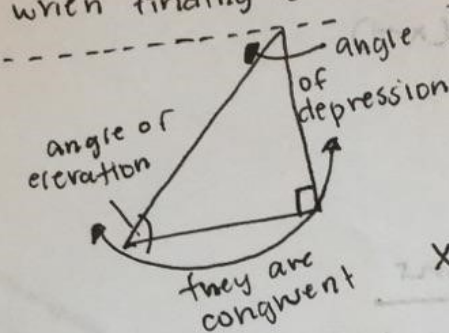


|a| - amplitude

$\frac{2\pi}{|b|}$ - period

* degree mode

* use inverse when finding "θ"



Formulas

distance:

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

midpoint:

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

direct: $y = kx$

inverse: $y = \frac{k}{x}$

joint: $y = kx^2$

* combined variation does more than 1 quadratic formula:

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

axis & x value:
 $x = \frac{-b}{2a}$

pythagorean theorem:
 $a^2 + b^2 = c^2$ right Δ

Area O: circumference:

$A = \pi r^2$ $A = \pi d$

volume sphere:

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

volume cylinder:

$V = \pi r^2 h$

Volume prism:

$A = l \cdot w \cdot h$

interior sum of angles:

$(n-2) \cdot 180^\circ$

↑
of sides

Vertical angles \cong

Alternate interior \cong

reflexive property $\overline{AB} \cong \overline{AB}$

C.P.C.T.C. - corresponding parts of congruent triangles are congruent

$\Delta FMT \cong \Delta GHP$

$\angle H \cong \angle M$

$\overline{FM} \cong \overline{GH}$

Functions

even - plug in -x, same function
odd - plug in -x, all functions completely opposite

Inverse - switch x & y
- solve for y
- use $f^{-1}(x)$ notation

parent functions:

$y = x$ linear

$y = x^2$ quadratic

$y = x^3$ cubic

$y = |x|$ absolute value

$y = \sqrt{x}$ square root

$y = b^x$ exponential

$b > 1$ growth $b < 1$ decay

$y = \log_b x$ logarithmic

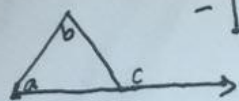
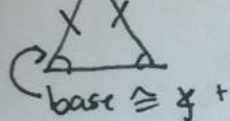
Domain - x

Range - y

functions DO NOT

have repeating x-values

Isosceles



$a + b = c$

sum of angles = 180°

Transformations

$y = a(x-h)^2 + k$ ← up/down

↑ (+) shift left
↓ (-) shift right