Formula Quiz

Higher Tier

Area of a triangle

½ x base x height

Area of a trapezium

$$\frac{1}{2}(a + b) \times h$$

Area of a circle

$$\pi \times r^2$$

Circumference of a circle

$\pi \times d$

or

$2 \times \pi \times r$

Area of a sector

$$\frac{\theta}{360} \times \pi r^2$$

Arc Length of a sector

$$\frac{\theta}{360} \times \pi d$$

Sum of Interior Angles of a polygon

$$(n - 2) \times 180$$

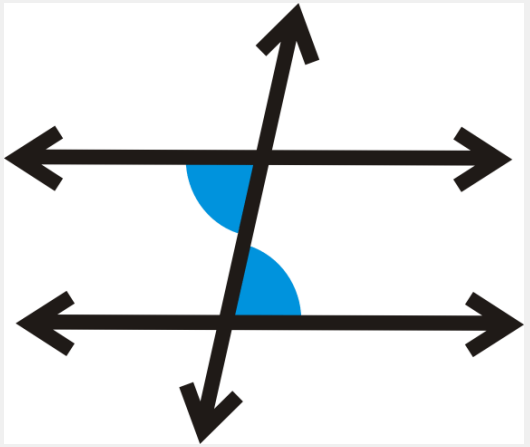
Exterior angle of a regular polygon

$$\frac{360}{n}$$

Interior angle of a regular polygon

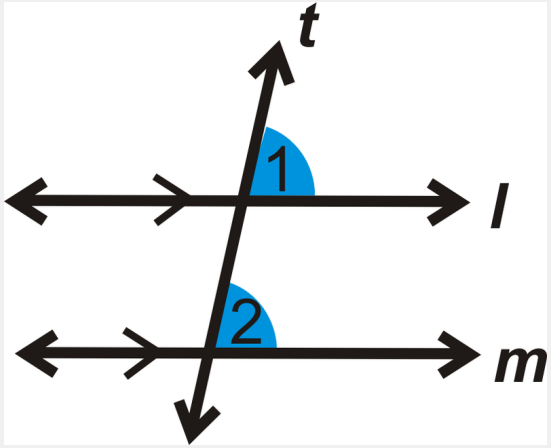
$$\frac{(n - 2) \times 180}{n}$$

What rule is this?



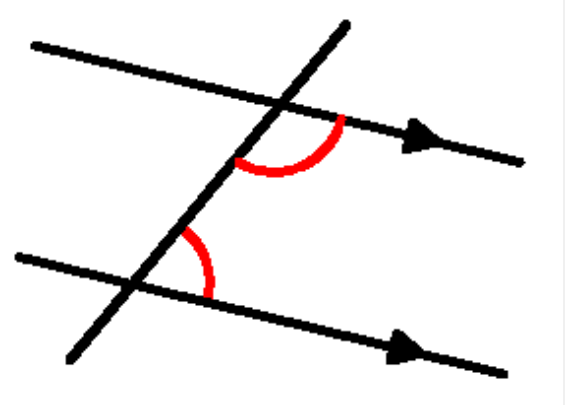
Alternate angles are equal

What rule is this?



Corresponding angles are equal

What rule is this?

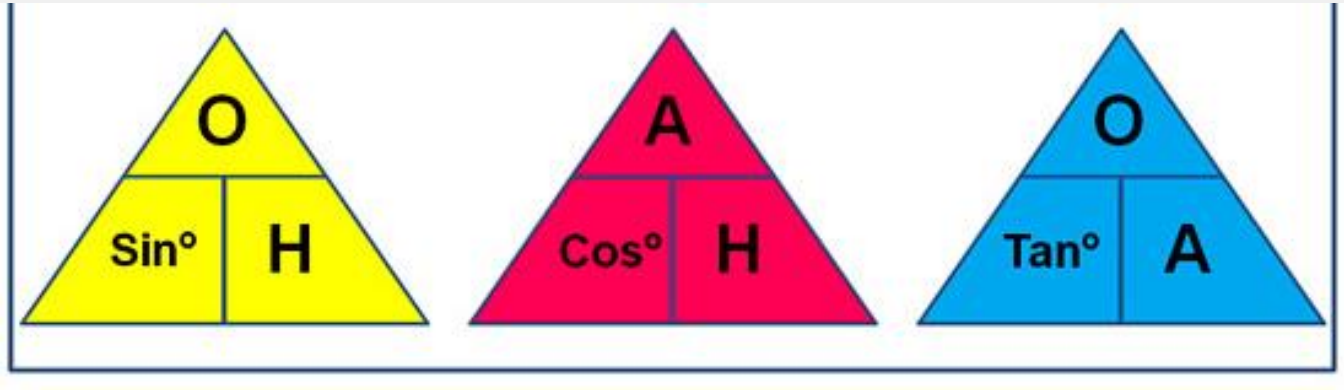


Co-interior angles add to 180º

Pythagoras Theorem

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

SOH CAH TOA



Sine Rule

$$\frac{a}{SinA} = \frac{b}{SinB} = \frac{c}{Sin\ C}$$

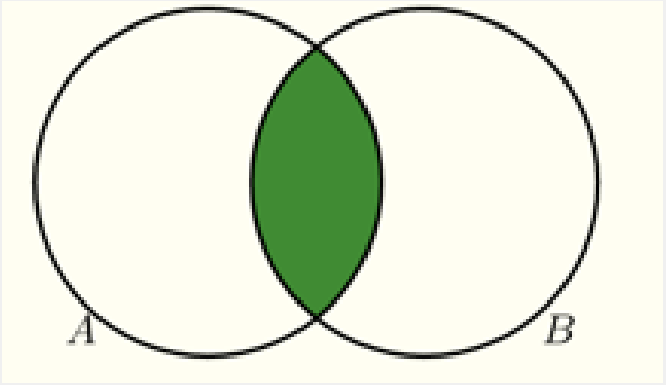
$$\frac{SinA}{a} = \frac{SinB}{b} = \frac{SinC}{c}$$

Cosine Rule

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

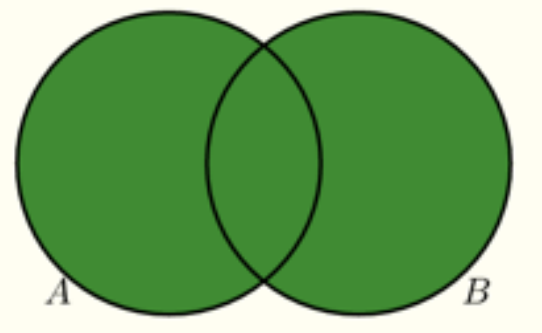
$$cosA = \frac{b^2 + c^2 - a^2}{2bc}$$

Set Notation



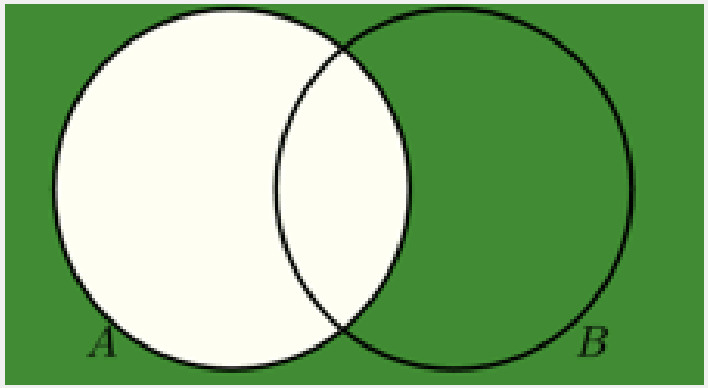
$$a \cap b$$

Set Notation



$$a \cup b$$

Set Notation



$$a'$$

Histograms – Frequency Density

$$FD = \frac{Frequency}{Class\ Width}$$

Histograms – Frequency

$$F = Frequency\ Density \times Class\ Width$$

Percentage Change Formula

$$\frac{Change}{Original} \times 100$$

Compound Interest Formula

$$Starting\ Amount\ \times Multiplier^{n}$$

Volume of Prism

$$Area\ of\ Crosssection\ \times Length$$

Volume of Cylinder

$$\pi r^2 \times h$$

Volume of Cone

$$\frac{\pi r^2 \times h}{3}$$

Volume of Sphere

$$\frac{4}{3} \times \pi r^3$$

Surface Area of Cylinder

$$2\pi r^2 + 2\pi rh$$

Surface Area of Cone

$$\pi r^2 + \pi r l$$

Surface Area of Sphere

$$4\pi r^2$$

Area of Triangles (Trigonometric)

$$\frac{1}{2}absinC$$

If you're given two points (x_1, y_1) and (x_2, y_2)

Gradient Formula

$$\frac{y_2 - y_1}{x_2 - x_1}$$

If you're given two points (x_1, y_1) and (x_2, y_2)

Midpoint Formula

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

If you're given two points (x_1, y_1) and (x_2, y_2)

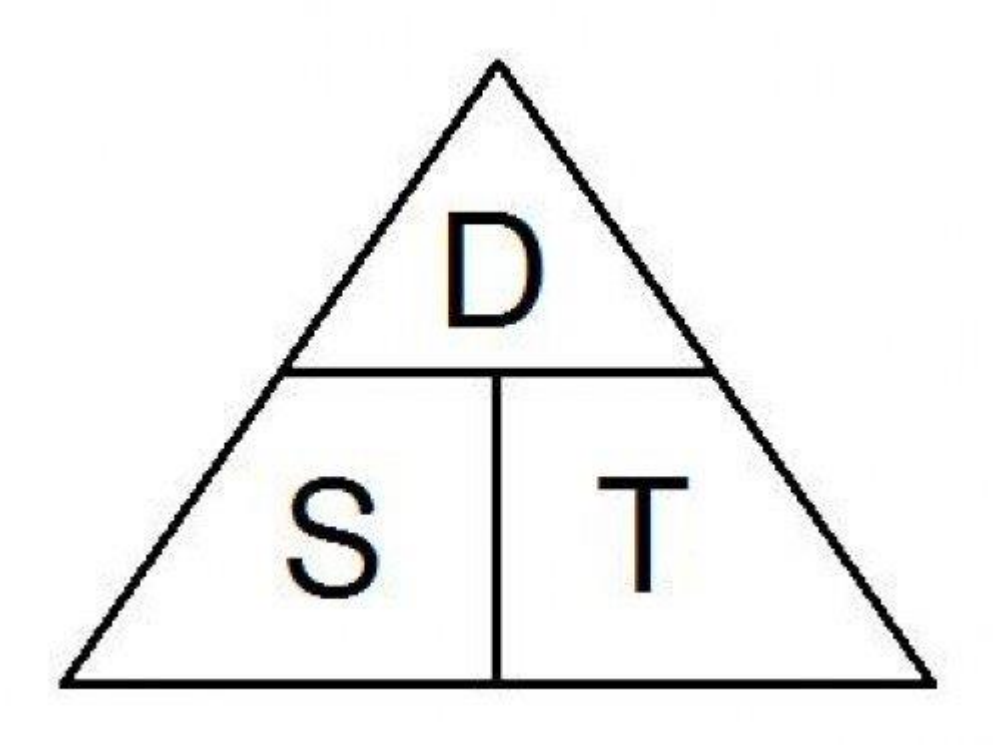
Line Length Formula

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

Formula for finding the equation of a straight line

$$y - y_1 = m(x - x_1)$$

Speed, Distance and Time Formula Triangle



Mass, Density & Volume Formula Triangle