

SOL Formulas to Memorize

Coordinate Formulas

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

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

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

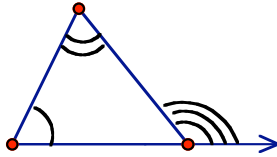
Conditional Statements

Converse: flip

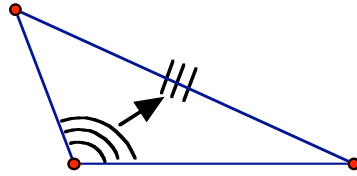
Inverse: opposite

Contrapositive: flip / opposite

Triangles



$$\text{int. } \angle + \text{int. } \angle = \text{ext. } \angle$$



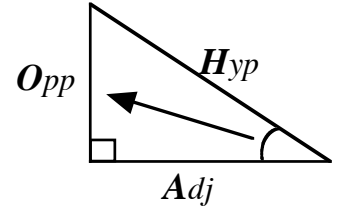
biggest \angle opposite longest side

Trigonometry: SOH CAH TOA

$$\sin \angle = \frac{O}{H}$$

$$\cos \angle = \frac{A}{H}$$

$$\tan \angle = \frac{O}{A}$$



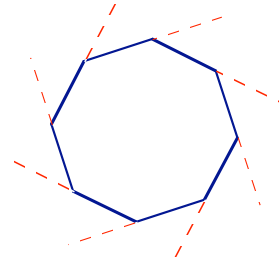
Polygons

sum of all int. \angle s
 $(n-2)180$

each int. \angle
 $\text{sum} \div n$

sum of all ext. \angle s
 360°

each ext. \angle
 $\text{sum} \div n$



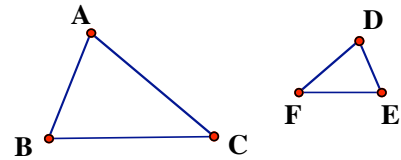
Similar Shapes

small shape \rightarrow

big shape \rightarrow

$$\frac{\text{part}}{\text{part}} = \frac{\text{part}}{\text{part}}$$

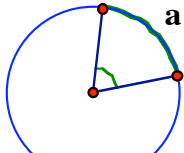
(cross multiply)



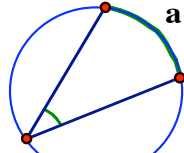
$\triangle ABC \sim \triangle DEF$

Circles

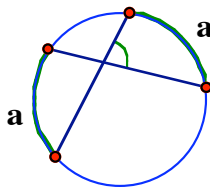
(angles)



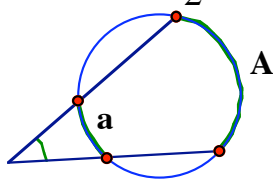
$$\angle = a$$



$$\angle = \frac{1}{2}a$$

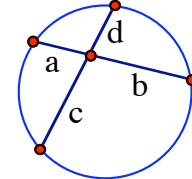


$$\angle = \frac{1}{2}(a + a)$$

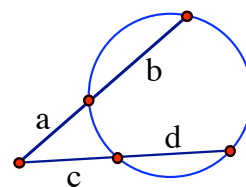


$$\angle = \frac{1}{2}(A - a)$$

(segments)



$$(a)(b) = (c)(d)$$



$$(a)(a + b) = (c)(c + d)$$