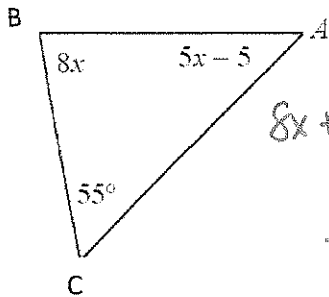


Geometry – Chapter 4 Wrap Up

Angles in a Triangle

1. Order the angles in the triangle from smallest to largest.



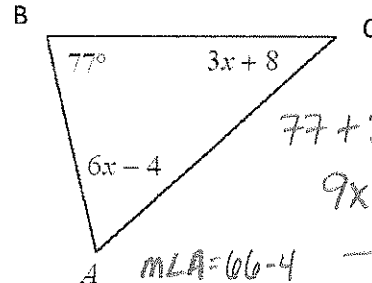
$$8x + 5x - 5 + 55 = 180$$

$$13x + 50 = 180$$

$$\begin{array}{r} 13x + 50 = 180 \\ -50 \quad -50 \\ \hline 13x = 130 \\ \frac{13x}{13} = \frac{130}{13} \\ x = 10 \end{array}$$

$m\angle A = 50 - 5 = 45$
 $m\angle B = 8(10) = 80$
 $m\angle C = 55$

$\angle A, \angle C, \angle B$



$$77 + 3x + 8 + 6x - 4 = 180$$

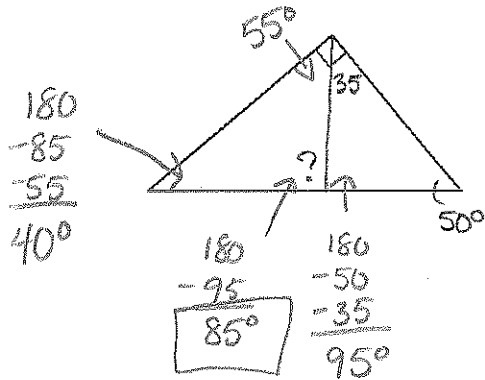
$$9x + 81 = 180$$

$$\begin{array}{r} 9x + 81 = 180 \\ -81 \quad -81 \\ \hline 9x = 99 \\ \frac{9x}{9} = \frac{99}{9} \\ x = 11 \end{array}$$

$m\angle A = 6(11) - 4 = 62$
 $m\angle B = 77$
 $m\angle C = 3(11) + 8 = 41$

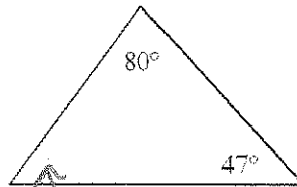
$\angle C, \angle A, \angle B$

2. Find the measure of the missing angle in each triangle.

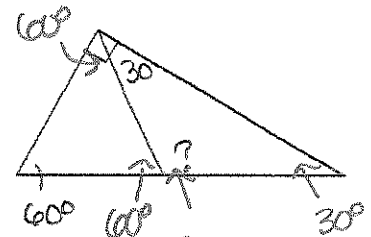


$$\begin{array}{r} 180 \\ -95 \\ \hline 85^\circ \end{array}$$

$$\begin{array}{r} 180 \\ -50 \\ -35 \\ \hline 95^\circ \end{array}$$



$$\begin{array}{r} 180 \\ -80 \\ -47 \\ \hline 53^\circ \end{array}$$



$$\begin{array}{r} 180 \\ -60 \\ -30 \\ -30 \\ \hline 120^\circ \end{array}$$

Classify Triangles by Side Length.

3. Classify Triangle with vertices at $(-3, -3)$, $(-8, -5)$, $(-8, -1)$ by side length.

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

$$\begin{matrix} x_1 & y_1 & x_2 & y_2 \\ (-3, -3) & & (-8, -5) \end{matrix}$$

$$d = \sqrt{(-8 - (-3))^2 + (-5 - (-3))^2}$$

$$d = \sqrt{(-5)^2 + (-2)^2}$$

$$d = \sqrt{25 + 4} = \sqrt{29}$$

Isosceles

$$\begin{matrix} (-8, -5) & (-8, -1) \\ x_1 & y_1 & x_2 & y_2 \end{matrix}$$

$$d = \sqrt{(-8 - (-8))^2 + (-1 - (-5))^2}$$

$$d = \sqrt{0^2 + (4)^2}$$

$$d = \sqrt{16}$$

$$d = 4$$

$$\begin{matrix} (-3, -3) & (-8, -1) \\ x_1 & y_1 & x_2 & y_2 \end{matrix}$$

$$d = \sqrt{(-8 + 3)^2 + (-1 + 3)^2}$$

$$d = \sqrt{(-5)^2 + (2)^2}$$

$$d = \sqrt{25 + 4}$$

$$d = \sqrt{29}$$

7.21

4. Classify triangles with vertices at $(-8, 1)$, $(-2, -3)$, $(4, -1)$ by side length.

$$\begin{matrix} (-8, 1) & (-2, -3) \\ x_1 & y_1 & x_2 & y_2 \end{matrix}$$

$$d = \sqrt{(-2+8)^2 + (-3-1)^2}$$

$$d = \sqrt{(6)^2 + (-4)^2}$$

$$d = \sqrt{36+16}$$

$$d = \sqrt{52}$$

Scalene

6.32

$$\begin{matrix} (-2, -3) & (4, -1) \\ x_1 & y_1 & x_2 & y_2 \end{matrix}$$

$$d = \sqrt{(4+2)^2 + (-1+3)^2}$$

$$d = \sqrt{(6)^2 + (2)^2}$$

$$d = \sqrt{36+4}$$

$$d = \sqrt{40}$$

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

$$\begin{matrix} (-8, 1) & (4, -1) \\ x_1 & y_1 & x_2 & y_2 \end{matrix}$$

$$d = \sqrt{(4+8)^2 + (-1-1)^2}$$

$$d = \sqrt{(12)^2 + (-2)^2}$$

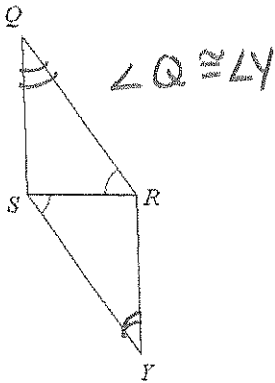
$$d = \sqrt{144+4}$$

$$d = \sqrt{148}$$

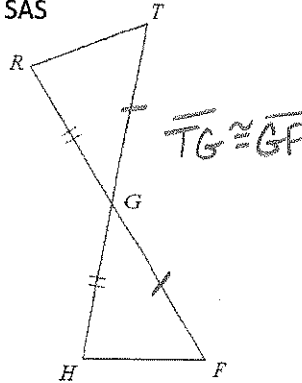
Additional Info Needed for Triangle Shortcuts

State what additional information is needed to show that the triangles are congruent by the given shortcut.

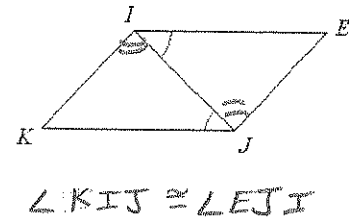
5. AAS



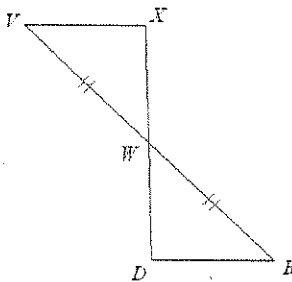
6. SAS



7. ASA



8. AAS



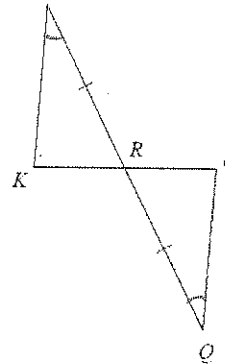
A) $\overline{XW} \cong \overline{DW}$

B) $\angle VWX \cong \angle DWB$

C) $\angle V \cong \angle B$

D) $\overline{VX} \parallel \overline{DB}$

9. ASA



A) $\angle K \cong \angle S$

B) $\angle IRK \cong \angle QRS$

C) $\overline{IK} \parallel \overline{SQ}$

D) $\overline{KR} \parallel \overline{RS}$