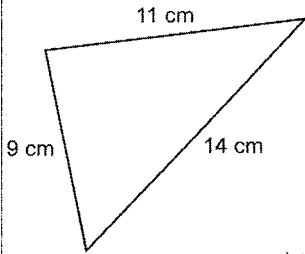


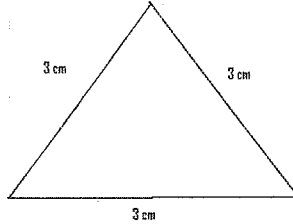
Lesson #119 – Triangle Angle Sum

Do Now:

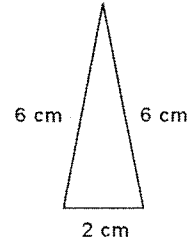
1) Classify each triangle by the sides (Scalene, Isosceles, or Equilateral).



Scalene (No equal sides)

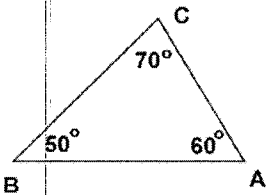


Equilateral (3 equal sides)

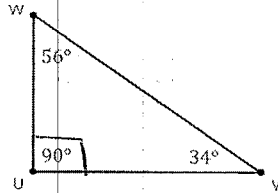


Isosceles (2 equal sides)

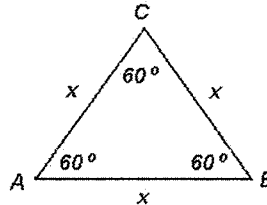
2) Classify each triangle by the angles (Obtuse, Acute, Right or Equiangular).



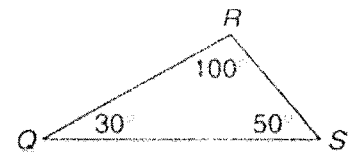
Acute



Right



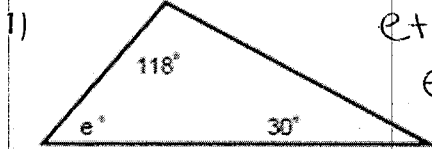
Equiangular



Obtuse

All triangles have angles that add up to 180 degrees.

Directions: Solve for the missing angle(s) algebraically.



$$e + 118 + 30 = 180$$

$$e + 148 = 180$$

$$\underline{-148 \quad -148}$$

$$e = 32^\circ$$

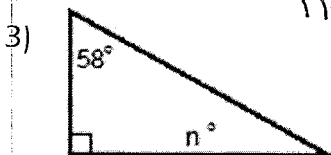


$$h + 116 + 32 = 180$$

$$h + 148 = 180$$

$$\underline{-148 \quad -148}$$

$$h = 32^\circ$$

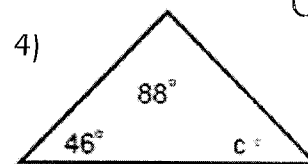


$$n + 90 + 58 = 180$$

$$n + 148 = 180$$

$$\underline{-148 \quad -148}$$

$$n = 32^\circ$$

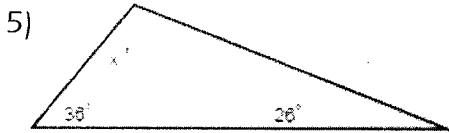


$$c + 88 + 46 = 180$$

$$c + 134 = 180$$

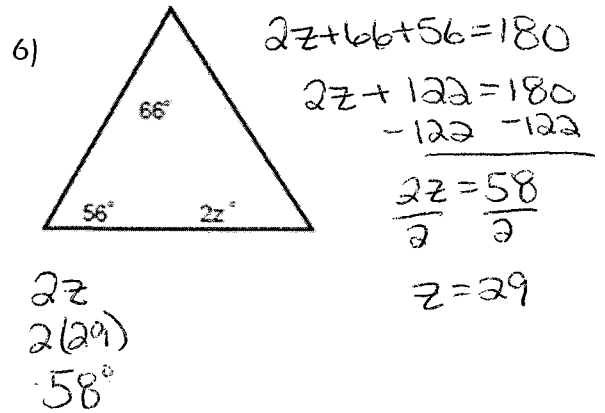
$$\underline{-134 \quad -134}$$

$$c = 46^\circ$$



$$x + 36 + 26 = 180$$

$$\begin{array}{r} x + 62 = 180 \\ -62 \quad -62 \\ \hline x = 118^\circ \end{array}$$



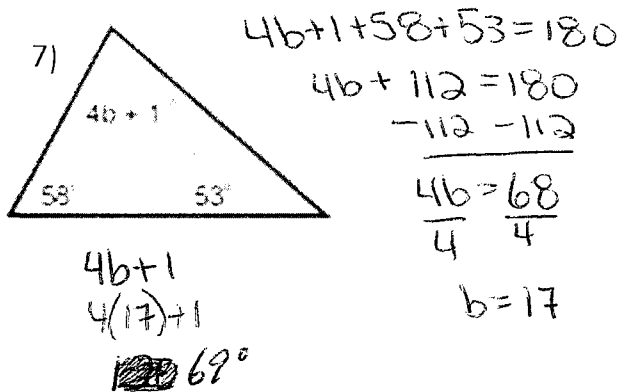
$$2z + 66 + 56 = 180$$

$$\begin{array}{r} 2z + 122 = 180 \\ -122 \quad -122 \\ \hline 2z = 58 \end{array}$$

$$\frac{2z}{2} = \frac{58}{2}$$

$$z = 29$$

$$\begin{array}{l} 2z \\ 2(29) \\ 58^\circ \end{array}$$



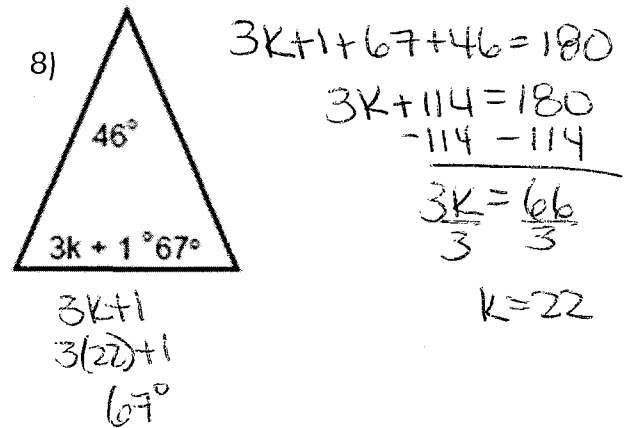
$$4b + 1 + 53 + 53 = 180$$

$$\begin{array}{r} 4b + 112 = 180 \\ -112 \quad -112 \\ \hline 4b = 68 \end{array}$$

$$\frac{4b}{4} = \frac{68}{4}$$

$$b = 17$$

$$\begin{array}{l} 4b + 1 \\ 4(17) + 1 \\ \hline 69^\circ \end{array}$$



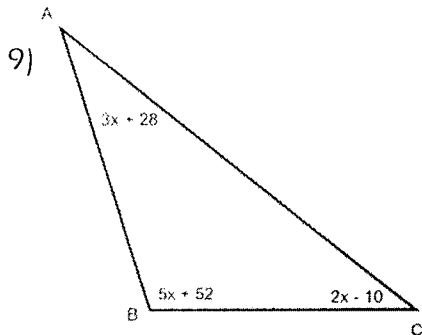
$$3k + 1 + 67 + 46 = 180$$

$$\begin{array}{r} 3k + 114 = 180 \\ -114 \quad -114 \\ \hline 3k = 66 \end{array}$$

$$\frac{3k}{3} = \frac{66}{3}$$

$$k = 22$$

$$\begin{array}{l} 3k + 1 \\ 3(22) + 1 \\ 67^\circ \end{array}$$



$$3x + 28 + 5x + 52 + 2x - 10 = 180$$

$$\begin{array}{r} 10x + 70 = 180 \\ -70 \quad -70 \\ \hline 10x = 110 \end{array}$$

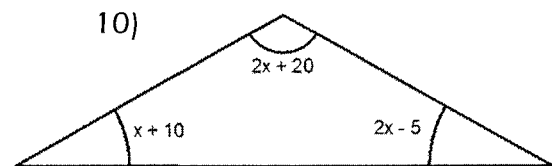
$$\frac{10x}{10} = \frac{110}{10}$$

$$x = 11$$

$$\begin{array}{l} 3x + 28 \\ 3(11) + 28 \\ 61^\circ \end{array}$$

$$\begin{array}{l} 5x + 52 \\ 5(11) + 52 \\ 107^\circ \end{array}$$

$$\begin{array}{l} 2x - 10 \\ 2(11) - 10 \\ 12^\circ \end{array}$$



$$2x + 20 + x + 10 + 2x - 5 = 180$$

$$\begin{array}{r} 5x + 25 = 180 \\ -25 \quad -25 \\ \hline 5x = 155 \end{array}$$

$$\frac{5x}{5} = \frac{155}{5}$$

$$x = 31$$

$$\begin{array}{l} x + 10 \\ 31 + 10 \\ 41^\circ \end{array}$$

$$\begin{array}{l} 2x + 20 \\ 2(31) + 20 \\ 82^\circ \end{array}$$

$$\begin{array}{l} 2x - 5 \\ 2(31) - 5 \\ 57^\circ \end{array}$$