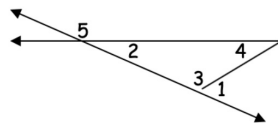


H. Geometry - Bellwork #44

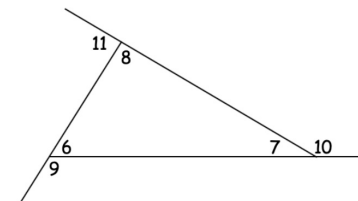
Use the figure at the right for problems 1-3.

1. Find $m\angle 3$ if $m\angle 5 = 130$ and $m\angle 4 = 70$.
2. Find $m\angle 1$ if $m\angle 5 = 142$ and $m\angle 4 = 65$.
3. Find $m\angle 2$ if $m\angle 3 = 125$ and $m\angle 4 = 23$.



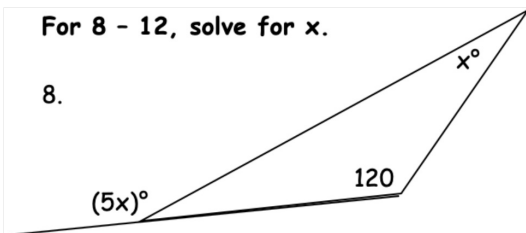
Use the figure at the right for problems 4-7.

4. $m\angle 6 + m\angle 7 + m\angle 8 = 180^\circ$
5. If $m\angle 6 = x$, $m\angle 7 = x - 20$, and $m\angle 11 = 80$, then $x = 50$
6. If $m\angle 8 = 4x$, $m\angle 7 = 30$, and $m\angle 9 = 6x - 20$, then $x = 25$
7. $m\angle 9 + m\angle 10 + m\angle 11 = 360$



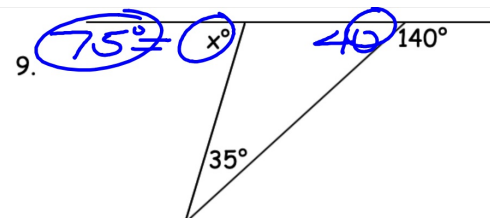
For 8 - 12, solve for x .

8.

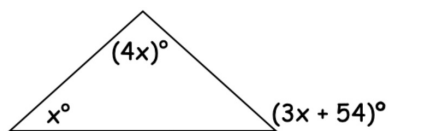


$$\begin{aligned} x + 120 &= 5x \\ 120 &= 4x \\ x &= 30 \end{aligned}$$

9.

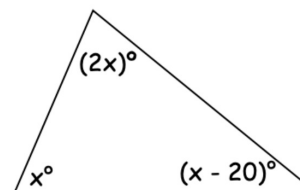


10.

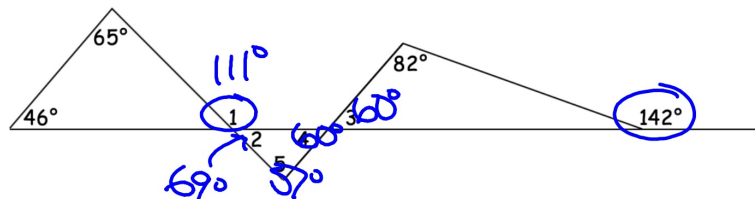


$$\begin{aligned} 5x &= 3x + 54 \\ 2x &= 54 \\ x &= 27^\circ \end{aligned}$$

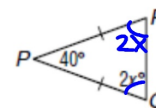
11.



$$\begin{aligned} 4x - 20 &= 180 \\ 4x &= 200 \\ x &= 50^\circ \end{aligned}$$

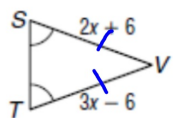
12. Find $m\angle 1$, $m\angle 2$, $m\angle 3$, $m\angle 4$, and $m\angle 5$.Use the properties of *isosceles triangles* to solve for the missing variable.

13.



$$\begin{aligned} 4x + 40 &= 180 \\ 4x &= 140 \\ x &= 35^\circ \end{aligned}$$

14.

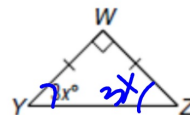


$$2x+6 = 3x-6$$

$$6 = x-6$$

$$x = 12$$

15.

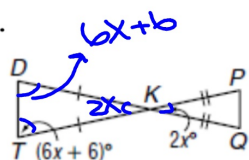


$$6x + 90 = 180$$

$$4x = 90$$

$$x = 15^\circ$$

16.



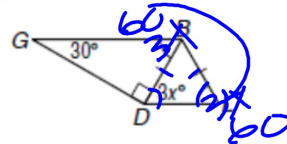
$$6x+6 + 6x+6 + 2x = 180$$

$$14x + 12 = 180$$

$$14x = 168$$

$$x = 12$$

17.



$$3x + 30 + 90 = 180$$

$$3x + 120 = 180$$

$$3x = 60$$

$$x = 20$$