

1. $\triangle ABC \cong \triangle A'B'C'$, $m\angle C = (3x - 40)^\circ$ and $m\angle C' = (2x - 10)^\circ$. Find $m\angle C$.

$$3x - 40 = 2x - 10$$

$$x = 30$$

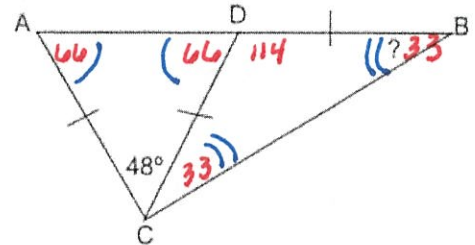
$$m\angle C = 50^\circ$$

2. In $\triangle ABC$, $m\angle A = 48^\circ$ and $m\angle C = 24^\circ$. What type of triangle is $\triangle ABC$?

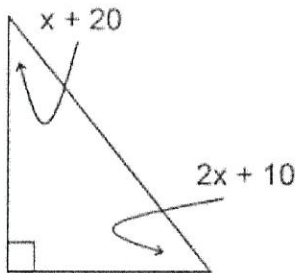
$$\begin{array}{r} 48 \\ 24 \\ \hline 72 \end{array}$$

$$m\angle B = 108^\circ \dots \text{obtuse}$$

3. In the diagram, $\overline{AC} \cong \overline{DC} \cong \overline{BC}$. If the $m\angle ACD = 48^\circ$, find the $m\angle B$.



Find the value of x .



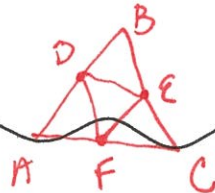
$$3x + 30 = 90$$

$$3x = 60$$

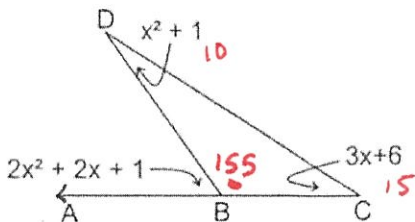
$$x = 20$$

5. The midpoints of the sides of $\triangle ABC$ are labeled D, E and F . If the perimeter of $\triangle DEF$ is 24, find the perimeter of $\triangle ABC$.

skip



6. Find the $m\angle DBC$.



Factor!

$$2x^2 + 2x + 1 = x^2 + 1 + 3x + 6$$

$$x^2 - x - 6 = 0$$

$$(x - 3)(x + 2) = 0$$

$$x = 3 \quad x = -2$$

$x \neq -2$ or
 $m\angle C = 0^\circ$

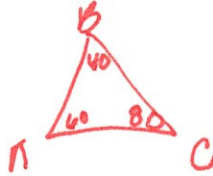
7. The vertex angle of an isosceles triangle measures eight times the measure of a base angle. Find the measure of a base angle.



$$10x = 180$$

$$x = 18^\circ$$

8. In $\triangle ABC$, $m\angle A = 60^\circ$ and $m\angle B = 40^\circ$. Which side of $\triangle ABC$ is the longest?



\overline{AB} ... across from largest \angle

9. In $\triangle ABC$, $\angle A$ is obtuse. Which statement is true about the sum of the measures of $\angle B$ and $\angle C$?

- A. $m\angle B + m\angle C = 90$
- B. $m\angle B + m\angle C > 90$
- C. $m\angle B + m\angle C < 90$
- D. $m\angle B + m\angle C = 180$

10. In the figure below, $\overline{BA} \cong \overline{BC}$ and $m\angle X = 117^\circ$. Find $m\angle Y$.

