

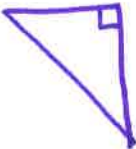






**Triangles by Angle Measure**

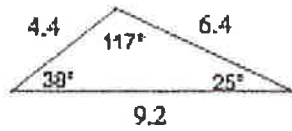
Word	Diagram	Example:
Acute all 3 angles are less than $90^\circ$		$65^\circ 40^\circ 75^\circ$
Obtuse one angle is greater than $90^\circ$		$120^\circ 35^\circ 25^\circ$
Right one angle is exactly $90^\circ$		$90^\circ 40^\circ 50^\circ$
Equiangular all 3 angles are exactly $60^\circ$		$60^\circ 60^\circ 60^\circ$

**Triangles by Side Length**

Word	Diagram	Example:
Scalene all 3 sides are different lengths		$3\text{cm } 4\text{cm } 5\text{cm}$
Isosceles two sides have the same length		$4\text{cm } 4\text{cm } 2\text{cm}$
Equilateral all three sides have the same length.		$6\text{cm } 6\text{cm } 6\text{cm}$

Classify the triangle by angle measure and side length

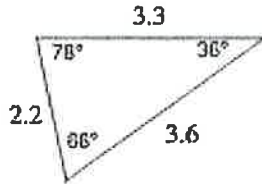
1.



angle  
measure  
obtuse

side  
length  
Scalene

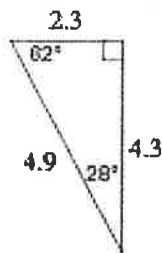
2.



acute

Scalene

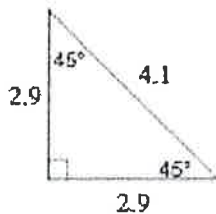
3.



right

Scalene

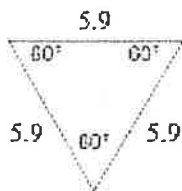
4.



right

Isosceles

5.

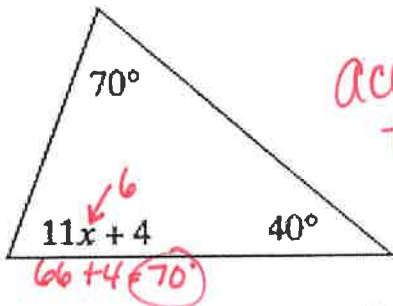


equiangular

equilateral

Find the value of  $x$ . Use the value of  $x$  to find all missing measures. Then classify by angle or side length.

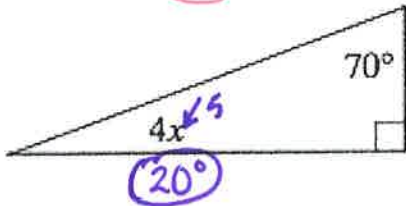
1.



acute triangle

$$\begin{aligned} 70 + 40 + 11x + 4 &= 180 \\ 11x + 114 &= 180 \\ 11x &= 66 \\ \boxed{x = 6} \end{aligned}$$

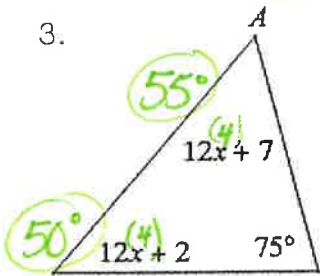
2.



$$\begin{aligned} 4x + 70 + 90 &= 180 \\ 4x + 160 &= 180 \\ 4x &= 20 \\ \boxed{x = 5} \end{aligned}$$

Right triangle

3.



$$\begin{aligned} 12x + 7 + 75 + 12x + 2 &= 180 \\ 24x + 84 &= 180 \\ 24x &= 96 \\ \boxed{x = 4} \end{aligned}$$

acute triangle

4. The perimeter of a scalene triangle is 65 centimeters. The length of the first side is twice the length of the second side. The length of the third side is 20 cm. Find the lengths of the other two sides.

$$\begin{aligned} \text{Side \#1} &= 2x = 30 \text{ cm} \\ \text{Side \#2} &= x = 15 \text{ cm} \\ \text{Side \#3} &= 20 = 20 \text{ cm} \end{aligned}$$

$$\begin{aligned} 2x + x + 20 &= 65 \\ 3x + 20 &= 65 \\ 3x &= 45 \end{aligned}$$

$$\boxed{x = 15}$$

5. The ratio of the side lengths of a triangle is 7:24:25. The perimeter of the triangle is 392 inches. Find the length of each side.

$$\begin{aligned} 7x + 24x + 25x &= 392 \\ 56x &= 392 \\ \boxed{x = 7} \end{aligned}$$

$$\begin{aligned} \text{Side \#1} &= 7(x) = 49 \text{ in} \\ \text{Side \#2} &= 24(x) = 168 \text{ in} \\ \text{Side \#3} &= 25(x) = 175 \text{ in} \end{aligned}$$

6. The perimeter of the triangle below is 22.5 in. Find the missing side lengths.

$$\begin{aligned} x + x + 6.3 &= 22.5 \\ 2x &= 16.2 \\ \boxed{x = 8.1} \end{aligned}$$

