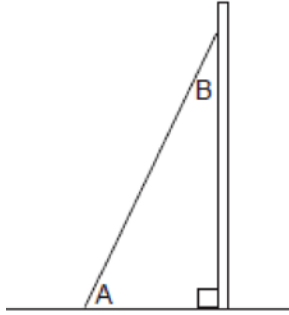


G.CO.C.10: Interior and Exterior Angles of Triangles 2

- 1 A billboard on level ground is supported by a brace, as shown in the accompanying diagram. The measure of angle A is 15° greater than twice the measure of angle B . Determine the measure of angle A and the measure of angle B .



- 2 The degree measures of the angles of $\triangle ABC$ are represented by x , $3x$, and $5x - 54$. Find the value of x .
- 3 In right $\triangle DEF$, $m\angle D = 90$ and $m\angle F$ is 12 degrees less than twice $m\angle E$. Find $m\angle E$.
- 4 In $\triangle ABC$, the measure of angle A is fifteen less than twice the measure of angle B . The measure of angle C equals the sum of the measures of angle A and angle B . Determine the measure of angle B .
- 5 The measures of the angles of a triangle are in the ratio $5:6:7$. Determine the measure, in degrees, of the *smallest* angle of the triangle.
- 6 In $\triangle ABC$, the measure of $\angle B$ is 21 less than four times the measure of $\angle A$, and the measure of $\angle C$ is 1 more than five times the measure of $\angle A$. Find the measure, in degrees, of each angle of $\triangle ABC$.

G.CO.C.10: Interior and Exterior Angles of Triangles 2

Answer Section

1 ANS:

$$\begin{array}{rcl}
 & A + B + C = 180 & \\
 m\angle A = 65 \text{ and } m\angle B = 25. & (2B + 15) + B + 90 = 180 & A + B + C = 180 \\
 & 3B = 75 & A + 25 + 90 = 180 \\
 & B = 25 & A = 65
 \end{array}$$

REF: 080837a

2 ANS:

$$\begin{array}{r}
 26. \quad x + 3x + 5x - 54 = 180 \\
 \qquad \qquad \qquad 9x = 234 \\
 \qquad \qquad \qquad x = 26
 \end{array}$$

REF: 080933ge

3 ANS:

$$\begin{array}{r}
 34. \quad 2x - 12 + x + 90 = 180 \\
 \qquad \qquad \qquad 3x + 78 = 90 \\
 \qquad \qquad \qquad 3x = 102 \\
 \qquad \qquad \qquad x = 34
 \end{array}$$

REF: 061031ge

4 ANS:

$$\begin{array}{rcl}
 A = 2B - 15 & . & 2B - 15 + B + 2B - 15 + B = 180 \\
 C = A + B & & 6B - 30 = 180 \\
 C = 2B - 15 + B & & 6B = 210 \\
 & & B = 35
 \end{array}$$

REF: 081332ge

5 ANS:

$$\frac{5}{5+6+7} \cdot 180 = 50$$

REF: 061529ge

6 ANS:

$$\begin{array}{l} m\angle A = x \qquad x + (4x - 21) + (5x + 1) = 180 \\ m\angle A = 20, m\angle B = 59, m\angle C = 101. \quad m\angle B = 4x - 21. \qquad 10x - 20 = 180. \\ m\angle C = 5x + 1 \qquad x = 20 \end{array}$$

$$m\angle A = x = 20^\circ$$

$$m\angle B = 4(20) - 21 = 59^\circ$$

$$m\angle C = 5(20) + 1 = 101^\circ$$

REF: 010538a