Segment and Angle Addition

1) B is the midpoint of AC. Solve for x.

$$A \xrightarrow{\quad 2x + 1 \quad} B \xrightarrow{\quad 3x - 3 \quad} C$$
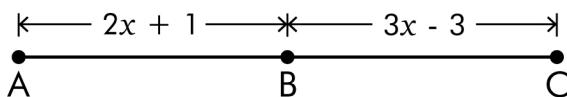
$x =$ _____

2) LN = 60. Find LM and MN.

$$L \xrightarrow{\quad 2x \quad} M \xrightarrow{\quad 4x + 6 \quad} N$$

LM = _____

MN = _____

3) Solve for x

$$P \xrightarrow{\quad 5x \quad} Q \xrightarrow{\quad x + 2 \quad} R$$
$$P \xrightarrow{\qquad\quad 20 \qquad\quad} R$$
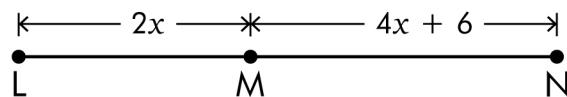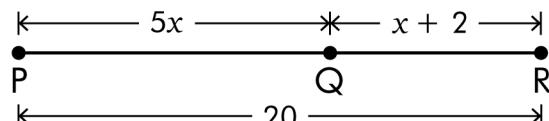
$x =$ _____

4) m∠QOR = 5x - 1
   m∠POQ = 2x
   m∠POR = 111°
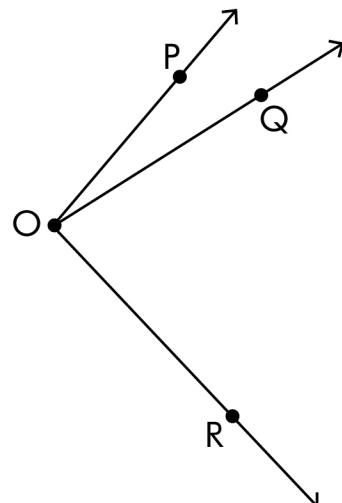
$x =$ _____

m∠QOR = _____

m∠POQ = _____

5) m∠AOC = 60°, m∠BOC = 28°.
   Find m∠AOB.
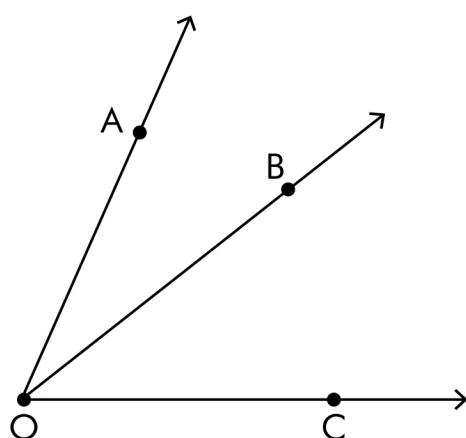
m∠AOB = _____

Segment and Angle Addition

Answers

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1) B is the midpoint of AC. Solve for x.

$$\overset{\longleftarrow 2x + 1 \longrightarrow\!\!*\!\!\longleftarrow 3x\text{ - }3 \longrightarrow}{\underset{A \qquad\qquad B \qquad\qquad C}{\bullet\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!\bullet\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!\bullet}}$$
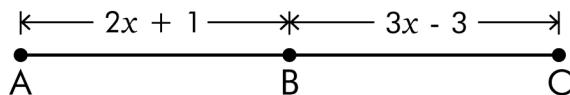
$x = \underline{\quad 4 \quad}$

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2) LN = 60. Find LM and MN.

$$\overset{\longleftarrow 2x \longrightarrow\!\!*\!\!\longleftarrow 4x + 6 \longrightarrow}{\underset{L \qquad\qquad M \qquad\qquad N}{\bullet\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!\bullet\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!\bullet}}$$

LM = \underline{\quad 18 \quad}

MN = \underline{\quad 42 \quad}

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3) Solve for x

$$\overset{\longleftarrow 5x \longrightarrow\!\!*\!\!\longleftarrow x + 2 \longrightarrow}{\underset{P \qquad\qquad Q \qquad\qquad R}{\bullet\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!\bullet\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!-\!\!\bullet}}$$

$$\longleftarrow \qquad\quad 20 \qquad\quad \longrightarrow$$
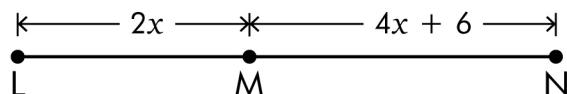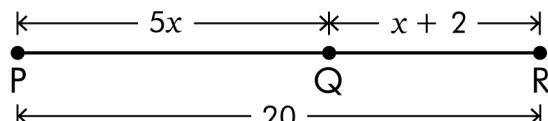
$x = \underline{\quad 3 \quad}$

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4) m∠QOR = 5x - 1

m∠POQ = 2x

m∠POR = 111°
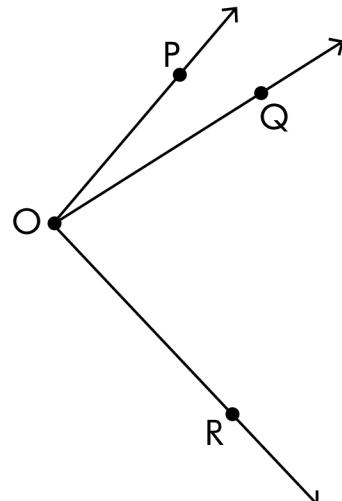
$x = \underline{\quad 16° \quad}$

m∠QOR = \underline{\quad 79° \quad}

m∠POQ = \underline{\quad 32° \quad}

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5) m∠AOC = 60°, m∠BOC = 28°. Find m∠AOB.

m∠AOB = \underline{\quad 32° \quad}