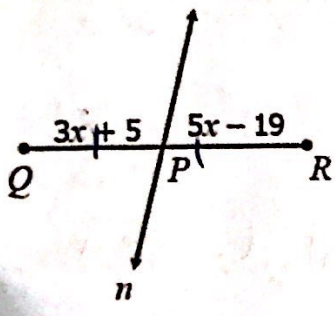


Key Ideas	Notes
<p>Finding a Missing Endpoint</p> $x_m = \frac{x_1 + x_2}{2}$ $y_m = \frac{y_1 + y_2}{2}$	<p style="text-align: right;">1.7 Midpoint Continued</p> <p style="text-align: center;">x_m, y_m</p> <p>1. Find the coordinates of A if M(-1,2) is the midpoint of \overline{AB} and B has the coordinates of (3,-5).</p> <p style="text-align: center;">x_1, y_1</p> $2(-1) = \frac{3 + x_2}{2} \quad 2 = \frac{-5 + y_2}{2}$ $-2 = 3 + x \quad 4 = -5 + y$ $-3 = x \quad 9 = y$ <p style="text-align: right;">(-5, 9)</p> <p>2. Find the coordinates of J if K(-5,10) is the midpoint of \overline{JL} and L has the coordinates of (-8,6).</p> <p style="text-align: center;">x, y</p> <p style="text-align: center;">J (-2, 14)</p> <p style="text-align: center;">K (-5, 10)</p> <p style="text-align: center;">L (-8, 6)</p>
<p>More Midpoint Examples (Algebra)</p>	<p>3. If P is the midpoint of \overline{XY}, $XP = 8x - 2$ and $PY = 12x - 30$, find the value of x. (Draw a diagram!)</p> <p style="text-align: center;">X $\xrightarrow{8x-2}$ P $\xrightarrow{12x-30}$ Y</p> $8x - 2 = 12x - 30$ $4x = 28$ $\boxed{x = 7}$ <p>4. If G is the midpoint of \overline{FH}, $FG = 14x + 25$ and $GH = 73 - 2x$, find \overline{FH}. (Draw a diagram!)</p> <p style="text-align: center;">F $\xrightarrow{14x+25}$ G $\xrightarrow{73-2x}$ H</p> $14x + 25 = 73 - 2x$ $16x = 48$ $x = 3$ $FG = 14(3) + 25 = 67$ $GH = 67$ $FH = 134$
	<p>5. Using the diagram to the left, if line n bisects \overline{QR}, find QP.</p> $3x + 5 = 5x - 19$ $24 = 2x$ $12 = x$ $3(12) + 5 = 41$