Algebra 1 Bellwork Monday, June 1, 2015

2

1. The midpoint of segment $\overline{AB}$ is $(-5,9)$. If the coordinates of Point A are $(2,1)$ find the coordinates of Point B.

2. Find the perimeter of $\triangle PQR$ if its vertices have the following coordinates:
$P(4,-1)$ $Q(-2,3)$ $R(4,5)$

3. Simplify. $5\sqrt{32}+3\sqrt{48}-7\sqrt{50}$

4. The length of sement $\overline{MN}$ is 13. The coordinates of Point M are $(6,-8)$. The x-coordinate of Point N is 1. Find the y-coordinate of Point N.

5. Simplify. $(8-3\sqrt{6})(4+2\sqrt{6})$

Algebra 1 Bellwork Monday, June 1, 2015 ANSWERS

1. The midpoint of segment $\overline{AB}$ is $(-5,9)$. If the coordinates of Point A are $(2,1)$ find the coordinates of Point B.

x-coord: $\frac{x+2}{2} = -5 \rightarrow x+2 = -10 \rightarrow \boxed{x = -12}$

y-coord: $\frac{y+1}{2} = 9 \rightarrow y+1 = 18 \rightarrow \boxed{y = 17}$

POINT B (-12, 17)

2. Find the perimeter of $\triangle PQR$ if its vertices have the following coordinates:
$P(4,-1)$ $Q(-2,3)$ $R(4,5)$

PQ: $\sqrt{(4--2)^2+(3--1)^2} = \sqrt{36+16} = \sqrt{52} = 7.2$

QR: $\sqrt{(4--2)^2+(5-3)^2} = \sqrt{36+4} = \sqrt{40} = 6.3$

PR: $5--1 = 6$

perimeter $= 7.2+6.3+6 = \boxed{19.5}$

3. Simplify. $5\sqrt{32}+3\sqrt{48}-7\sqrt{50}$

$\sqrt{16}\cdot 2 \quad \sqrt{16}\cdot 3 \quad \sqrt{25}\cdot 2$

$5\cdot 4\sqrt{2} + 3\cdot 4\sqrt{3} - 7\cdot 5\cdot\sqrt{2}$

$20\sqrt{2} + 12\sqrt{3} - 35\sqrt{2} = \boxed{-15\sqrt{2}+12\sqrt{3}}$

4. The length of sement $\overline{MN}$ is 13. The coordinates of Point M are $(6,-8)$. The x-coordinate of Point N is 1. Find the y-coordinate of Point N.

$13 = \sqrt{(6-1)^2+(y--8)^2} \Rightarrow$

$(13)^2 = \left(\sqrt{25+(y+8)^2}\right)^2 \Rightarrow 169 = 25+(y+8)^2$

$-25 \quad -25$

$\sqrt{144} = \sqrt{(y+8)^2}$

$\pm 12 = y+8$

$y = 12-8$ or $-12-8$

$\boxed{y = 4 \text{ or } -20}$

5. Simplify. $(8-3\sqrt{6})(4+2\sqrt{6})$

	8	$-3\sqrt{6}$
4	32	$-12\sqrt{6}$
$+2\sqrt{6}$	$+16\sqrt{6}$	-36

$= \boxed{-4+4\sqrt{6}}$