Algebra 1 Bellwork Monday, November 17, 2014

Tell if each pair of lines is parallel, perpendicular, or neither

1. $y = 2x - 9$
   $y = 2$

2. $y = -5x + 3$
   $y = -\frac{1}{5}x + 1$

3. $y = -3x - 9$
   $12x + 4y = 10$

4. $y = 0.125x + 3$
   $16x + 2y = 6$

5. $y = -4x + 5$
   $16x + 4y = 20$

6. $y = \frac{2}{3}x - 8$
   $y - 1 = \frac{2}{3}(x - 12)$

7. Write an equation for the line that is parallel to the line $y = 7x - 9$ and passes through the point $(-1, 6)$.

8. Write an equation for the line that is perpendicular to the line $y = -2x + 1$ and passes through the point $(4, -8)$.

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ANSWERS

Tell if each pair of lines is parallel, perpendicular, or neither

1. $y = 2x - 9$ $m = 2$
   $y = 2$ $m = 0$
   NEITHER

2. $y = -5x + 3$ $m = -5$
   $y = -\frac{1}{5}x + 1$ $m = -1/5$
   NEITHER

3. $y = -3x - 9$ $m = -3$ $b = -9$
   $12x + 4y = 10 \longrightarrow y = \frac{10 - 12x}{4} = 10/4 - 3x$
   $m = -3$ $b = 10/4$
   PARALLEL

4. $y = 0.125x + 3$ $m = .125$
   $16x + 2y = 6$ $y = \frac{6 - 16x}{2} = 3 - 8x$
   $m = -8$
   $(.125)(-8) = -1$
   PERPENDICULAR

5. $y = -4x + 5$
   $16x + 4y = 20$ $y = \frac{20 - 16x}{4}$
   $y = 5 - 4x$
   NEITHER same line

6. $y = \frac{2}{3}x - 8$ $m = 2/3$ $b = -8$
   $y - 1 = \frac{2}{3}(x - 12) \longrightarrow y - 1 = 2/3x - 8$
   $y = 2/3x - 7$ $m = 2/3$ $b = -7$
   PARALLEL

7. Write an equation for the line that is parallel to the line $y = 7x - 9$ and passes through the point $(-1, 6)$. $m = 7$

   $y - 6 = 7(x + 1)$ or $y = 7x + 13$

8. Write an equation for the line that is perpendicular to the line $y = -2x + 1$ and passes through the point $(4, -8)$. $m = \frac{1}{2}$

   $y + 8 = 1/2(x - 4)$ or $y = 1/2x - 10$