Name: Key Class: _____ Date: _____ ID: A

Algebra 2: Cummulative Review Homework 4

1. Solve: $\frac{1}{4}b - \frac{1}{4} = -\frac{1}{2} - \frac{2}{3}b$ $\cdot 12$

   a. $\frac{3}{11}$ $3b - 3 = -6 - 8b$

   b. $-\frac{3}{11}$ $11b - 3 = -6$

   c. $-\frac{9}{11}$ $11b = -3$

   d. $\frac{3}{5}$ $b = -3/11$

2. Solve: $\frac{1}{5} + x + \frac{6}{5} \geq \frac{7}{5}$ $\cdot 5$

   a. $x \leq \frac{2}{5}$ $1 + 5x + 6 \geq 7$

   b. $x \geq \frac{2}{5}$ $7 + 5x \geq 7$

   c. $x \geq 2\frac{4}{5}$ $5x \geq 0$

   d. $x \geq 0$ $x \geq 0$

3. Are the graphs of the lines in the pair parallel? Explain.

   $y = -\frac{1}{9}x + 10$

   $-x - 9y = -11$ $\rightarrow$ $-9y = x - 11$, $y = -1/9\,x + 11/9$

   a. Yes, since the slope are the same and the y-intercepts are the same.

   b. No, since the y-intercepts are different.

   c. Yes, since the slope are the same and the y-intercepts are different.

   d. No, since the slopes are different.

4. Write the equation of a line that is perpendicular to the given line and that passes through the given point.

   $-x - 6y = 12$; $(9, -8)$

   a. $y = -6x - 62$

   b. $y = \frac{1}{6}x + 57$

   c. $y = \frac{1}{6}x - 62$

   d. $y = 6x - 62$

   $y = mx + b$

   $-8 = 6(9) + b$

   $-8 = 54 + b$

   $b = -62$

   $y = 6x - 62$

   $-x - 6y = 12$

   $-6y = x + 12$

   $y = \frac{-1}{6}x + \frac{12}{-6}$

   $y = -1/6\,x - 2$

   $m = -1/6$

   $\perp m = 6$

5. Solve: $|-7x + 2| = -8x$

   a. -2

   b. $\{-2, -\frac{2}{15}\}$

   c. $\{-2, \frac{2}{15}\}$

   d. no solution

   $-7x + 2 = -8x$ OR $-7x + 2 = 8x$

   $2 = -x$ $2 = 15x$

   $x = -2$ OR $x = \frac{2}{15}$

   extraneous

   $|-7x + 2| = -8(2/15)$

   = negative

   No!

6. Solve: $u = \frac{j}{t}$, for t

   a. $t = j$

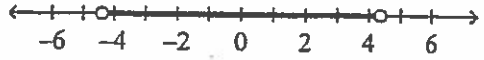
   b. $t = \frac{j}{u}$ $ut = j$, $t = \frac{j}{u}$

   c. $t = \frac{u}{j}$

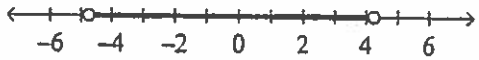
   d. $t = uj$

7. Solve and graph: $2\left|x + \frac{1}{4}\right| < 9$

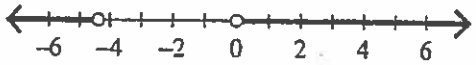
   a. $-4\frac{3}{8} < x < 4\frac{3}{8}$

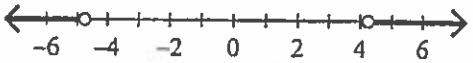
   b. $-4\frac{3}{4} < x < 4\frac{1}{4}$

   c. $x < -4\frac{3}{8}$ or $x > 4\frac{3}{8}$

   d. $x < -4\frac{3}{4}$ or $x > 4\frac{1}{4}$

   $|x + 1/4| < 9/2$

   $x + 1/4 < 9/2$ AND $x + 1/4 > -9/2$

   $x < 17/4$ AND $x > -19/4$

   $x < 4\,1/4$ AND $x > -4\,3/4$

   $-4\,3/4 < x < 4\,1/4$

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8. Simplify: $-(6)^{-1}$

a. 6

b. $-\frac{1}{-1^6}$

c. $\frac{1}{6}$

d. $-\frac{1}{6}$

9. Simplify: $\frac{3^7}{3^5}$

a. 3^{35}

b. 3^{12}

c. $\frac{1}{3^9}$

d. 9

10. Simplify: $\left(\frac{(-1)^5}{(-2)^{-3}}\right)^2$

a. $\frac{1}{64}$

b. 64

c. 2^{30}

d. 2^{-30}

11. Write in scientific notation: 8,670,000,000

a. 0.867×10^{10}

b. 86.7×100^8

c. 8.67×10^9

d. 8.67×10

12. Simplify the expression. Write the answer using scientific notation. $\left(0.4 \times 10^{-6}\right)\left(0.7 \times 10^{-2}\right)$

a. 2.8×10^{-9}

b. 2.8×10^{-8}

c. 2.8×10^{-7}

d. 0.28×10^{-9}

13. Simplify: $8p(-3p^2 + 6p - 2)$

a. $-5p^3 + 14p^2 - 6p$

b. $48p^2 - 16p - 24p^3$

c. $14p^2 - 6p - 5p^3$

d. $-24p^3 + 48p^2 - 16p$

14. Simplify: $\left(-10x^2 - 4x + 12\right) - \left(12x^2 + 19x - 3\right)$

a. $-22x^2 - 15x + 15$

b. $-22x^2 - 16x + 9$

c. $-22x^2 - 23x + 9$

d. $-22x^2 - 23x + 15$

15. Solve: $4 - \frac{3}{5}(3a + 4) = 7$

a. $-7.\overline{4}$

b. -6

c. 3

d. -3