

Algebra 2: Cumulative Review Homework 3

Solve the equation. Then check your solution.

1. $(1\frac{1}{3})p = -1\frac{1}{3}$ $15(\frac{6}{5}p) = (-\frac{4}{3})15$
 a. $1\frac{3}{5}$
 b. $1\frac{1}{9}$
 c. $-1\frac{1}{9}$ $18p = -20$
 d. $-1\frac{3}{5}$ $p = \frac{-20}{18} = -\frac{10}{9}$
 $= -1\frac{1}{9}$

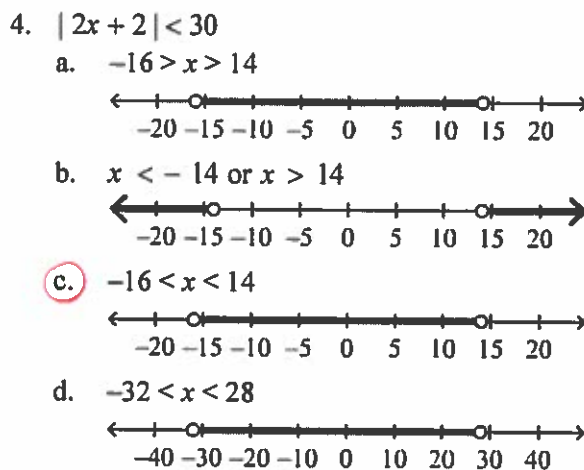
2. $(\frac{1}{4}b - \frac{1}{4} = -\frac{1}{2} - \frac{2}{3}b) \cdot 12$
 a. $\frac{3}{11}$
 b. $-\frac{3}{11}$ $3b - 3 = -6 - 8b$
 c. $-\frac{9}{11}$ $11b - 3 = -6$
 d. $\frac{3}{5}$ $11b = -3$
 $b = -\frac{3}{11}$

Solve the inequality.

3. $(\frac{1}{5} + x + \frac{6}{5} \geq \frac{7}{5}) \cdot 5$
 a. $x \leq \frac{2}{5}$
 b. $x \geq \frac{2}{5}$ $1 + 5x + 6 \geq 7$
 c. $x \geq 2\frac{4}{5}$ $5x + 7 \geq 7$
 d. $x \geq 0$ $5x \geq 0$
 $x \geq 0$

$2x+2 < 30$ AND $2x+2 > -30$
 $2x < 28$ $2x > -32$
 $x < 14$ AND $x > -16$
 $-16 < x < 14$

Solve the inequality. Graph the solution.



Find the slope and y-intercept of the line.

5. $18x + 9y = -45$ $9y = -18x - 45$
 a. $-2; -\frac{1}{5}$ $y = -2x - 5$
 b. $-\frac{1}{2}; -5$ $m = -2$
 c. $-2; -5$ $b = -5$
 d. $2; 5$

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

6. $y = -\frac{1}{9}x + 10$
 $-x - 9y = -11$
 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.

$-\frac{9y}{-9} = \frac{x-11}{-9} - \frac{11}{-9}$
 $y = -\frac{1}{9}x + 1\frac{1}{9}$

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

7. $-x - 6y = 12$; $(9, -8)$
- a. $y = -6x - 62$
- b. $y = \frac{1}{6}x + 57$
- c. $y = \frac{1}{6}x - 62$
- d.** $y = 6x - 62$
- Handwritten notes:*
 $-6y = x + 12$
 $y = -\frac{1}{6}x - 2$
 $m = -\frac{1}{6}$
 $\perp m$ is negative reciprocal
 $\perp m = 6$
 $y = mx + b$
 $-8 = 54 + b$
 $-8 = 6(9) + b$
 $-62 = b$

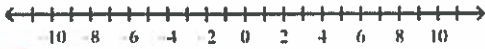
Write an equation for the line that is parallel to the given line and that passes through the given point.

8. $y = \frac{9}{5}x + 5$; $(5, 4)$
- a. $y = \frac{5}{9}x - 5$
- b. $y = \frac{9}{5}x - \frac{11}{5}$
- c. $y = -\frac{5}{9}x + 5$
- d.** $y = \frac{9}{5}x - 5$
- Handwritten notes:*
 $m = \frac{9}{5}$ // lines have equal slopes
 $y = mx + b$
 $4 = \frac{9}{5} \cdot 5 + b$
 $4 = 9 + b$
 $b = -5$

Solve.

9. $|-7x + 2| = -8x$
- a.** -2
- b. $\{-2, -\frac{2}{15}\}$
- c. $\{-2, \frac{2}{15}\}$
- d. no solution
- Handwritten notes:*
 $-7x + 2 = -8x$
 $x + 2 = 0$
 $x = -2$
 OR
 $-7x + 2 = 8x$
 $2 = 15x$
 $x = \frac{2}{15}$
 Extraneous

Solve each inequality and graph.

10. $4|x + 5| - 3 > 41$
- Handwritten notes:*
 $4|x + 5| > 44$
 $|x + 5| > 11$
- 
- a.** $x > 6$ or $x < -16$
- b. $x > 6$ and $x < -16$
- c. $x > 6$ or $x < -14.5$
- d. $x > 6$ and $x < -14.5$
- Handwritten notes:*
 $x + 5 > 11$ OR $x + 5 < -11$
 $x > 6$ OR $x < -16$

Solve the given equation or formula for the specified variable.

11. $u = \frac{f}{t}$, for t
- a. $t = f$
- b. $t = uf$
- c. $t = \frac{u}{f}$
- d.** $t = \frac{f}{u}$
- Handwritten notes:*
 $tu = t \cdot \frac{f}{t}$
 $tu = f$
 $t = \frac{f}{u}$
12. $\frac{m(a - 16)}{p - 20} = y$, for a
- a. $a = \frac{y(p - 20) - 16}{m}$
- b. $a = y(p - 20) + 16m$
- c.** $a = \frac{y(p - 20) + 16m}{m}$
- d. $a = \frac{y(p - 20) - 16m}{m}$
- Handwritten notes:*
 $m(a - 16) = y(p - 20)$
 $a - 16 = \frac{y(p - 20)}{m}$
 $a = 16 + \frac{y(p - 20)}{m}$
 $a = \frac{16m + y(p - 20)}{m}$

13. Find the value of $f(4)$ and $g(-10)$ if $f(x) = -8x - 8$

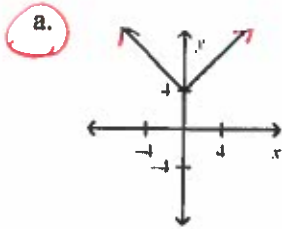
- and $g(x) = 2x^2 - 22x$.
- a. $f(4) = -24$
 $g(-10) = -2208$
- b.** $f(4) = -40$
 $g(-10) = 420$
- c. $f(4) = 80$
 $g(-10) = 8$
- d. $f(4) = -16$
 $g(-10) = 102$

$f(4) = -8(4) - 8 = -32 - 8 = -40$

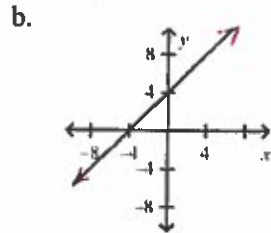
$g(-10) = 2(-10)^2 - 22(-10)$
 $= 2(100) - (-220)$
 $= 200 + 220$
 $= 420$

9 Since we are saying that some abs. value = $-8x$, $-8x$ would have to be positive - therefore x can only be a negative

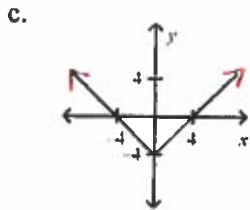
14. Graph the function $f(x) = |x| + 4$. Identify its domain and range.



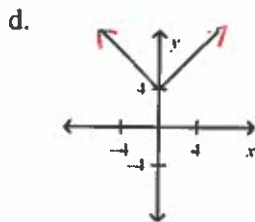
The domain of the function is all real numbers.
The range of the function is $\{y | y \geq 4\}$.



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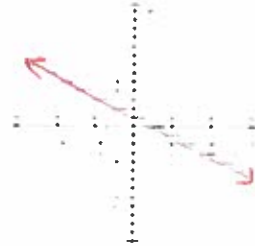
The domain of the function is all real numbers.
The range of the function is $\{y | y \leq 4\}$.



The domain of the function is all integers. The range of the function is $\{y | y \leq 4\}$.

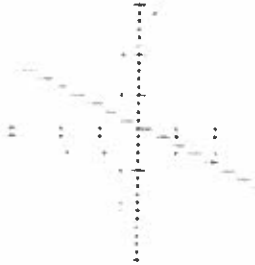
15. Find the x-intercept and the y-intercept of the graph of the equation $10x + 20y = 4$. Then graph the equation.

a. x-int: $\frac{4}{10}$; y-int: $\frac{4}{20}$



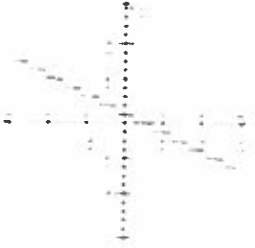
$10x + 20y = 4$
x-int $\Rightarrow y = 0$
 $10x = 4$
 $x = \frac{4}{10} (= \frac{2}{5})$
y-int $\Rightarrow x = 0$

b. x-int: $-\frac{20}{10}$; y-int: $-\frac{4}{20}$



$20y = 4$
 $y = \frac{4}{20} (= \frac{1}{5})$

c. x-int: $\frac{10}{20}$; y-int: $\frac{4}{10}$



d. x-int: $-\frac{4}{20}$; y-int: $-\frac{4}{10}$



16. State whether the given equation or function is linear.

$f(x) = 9x^3 + 5$

- a. Linear
b. Not-Linear

cubic
linear has a degree of 1
f(x) = 9x + 5 would be linear

