

1. Identify all of the sets of numbers to which each belongs:

- W, Z, Q, R Z, Q, R Q, R I, R
 a. 4 b. -2 c. $\frac{2}{3}$ d. $\sqrt{5}$

2. Write an example of the commutative property. $2+4=4+2$

3. Write an example of the identity (addition) $4+0=4$

4. Name the property: $2(x+3)=2x+6$ *Distributive*

5. Name the property: $4 \times \frac{1}{4} = 1$ *inverse multiplication*

6. Name the property: $(9+y)+2=9+(y+2)$ *associative addition*

Evaluate.

7. $2a^3 + (2a)^2$ when $a = -3$.
 $2(-3)^3 + (2 \cdot -3)^2$
 $2(-27) + (-6)^2$
 $-54 + 36 = -18$

8. $-4rs + (-rs) - 2r^2$ when $r=3$ and $s=-4$
 $-4(3)(-4) + (-3 \cdot -4) - 2(3)^2$
 $48 + 12 - 18$
 42

Simplify.

9. $32 - (9)(5) \div 3$
 $32 - 45 \div 3$
 $32 - 15 = 17$

10. $\frac{6(4-1)^2}{3-7} - \frac{6(3)^2}{-4} = \frac{6 \cdot 9}{-4} = \frac{54}{-4} = -\frac{27}{2}$

Solve.

11. $7x - 24 = 11$
 $7x = 35$
 $x = 5$

12. $\frac{-2}{3}x + 6 = \frac{5}{6}x - \frac{7}{4}$ 12 LCD
 $-\frac{24}{3}x + 72 = \frac{60}{6}x - \frac{84}{4}$
 $-8x + 72 = 10x - 21$
 $72 = 18x - 21$
 $93 = 18x$
 $\frac{31}{6} = x$

13. $3(2x-3) = 5 - (3-2x)$
 $6x - 9 = 5 - 3 + 2x$
 $6x - 9 = 2 + 2x$
 $4x = 11$
 $x = \frac{11}{4}$

14. $-2(3x-4) + 3(x-2) = -3x+2$
 $-6x + 8 + 3x - 6 = -3x + 2$
 $-3x + 2 = -3x + 2$
 $2 = 2$
all \mathbb{R}

15. $2|x-1| - 3 = 11$
 $2|x-1| = 14$
 $|x-1| = 7$
 $x-1 = 7$
 $x = 8$

$x-1 = -7$
 $x = -6$

$2|8-1| - 3 = 11$
 $14 - 3 = 11$ ✓

$2|-6-1| - 3 = 11$
 $14 - 3 = 11$ ✓

Solve for the indicated variable.

16. Solve for A: $B = \frac{2}{3}(A - 9)$.

$$B = \frac{2}{3}A - 6$$

$$B + 6 = \frac{2}{3}A$$

$$\cdot \frac{3}{2}$$

$$A = \frac{3}{2}B + 9$$

18. Solve for b: $\frac{N}{2a^2} = \frac{2a^2b}{2a^2}$.

$$b = \frac{N}{2a^2}$$

Solve the inequality. Then graph your solution.

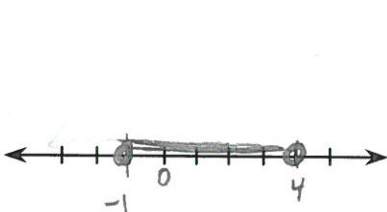
20. $3x - 5 < -17$
 $\quad \quad \quad +5 \quad +5$
 $3x < -12$
 $x < -4$



22. $-9 \leq 3x - 15 \leq 18$
 $-9 \leq 3x - 15$ $3x - 15 \leq 18$
 $6 \leq 3x$ $3x \leq 33$
 $2 \leq x$ $x \leq 11$



24. $|2x - 3| \leq 5$



$$2x - 3 \leq 5$$

$$2x \leq 8$$

$$x \leq 4$$

$$2x - 3 \geq -5$$

$$2x \geq -2$$

$$x \geq -1$$

17. Solve for u: $-3u - w = u + 5w$

$$-4u = 6w$$

$$u = 6w / -4$$

$$u = -3w/2$$

19. Solve for y: $3x - 2y = 10$
 $\quad \quad \quad -3x \quad \quad -3x$

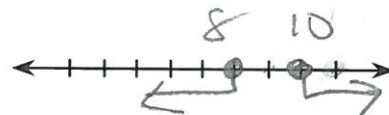
$$-2y = -3x + 10$$

$$\frac{-2y}{-2} = \frac{-3x + 10}{-2}$$

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

21. $x + 4 \geq 14$ or $x - 3 \leq 5$

$$x \geq 10 \quad x \leq 8$$



23. $|2x - 5| > 1$

$$2x - 5 > 1$$

$$2x > 6$$

$$x > 3$$

$$2x - 5 < -1$$

$$2x < 4$$

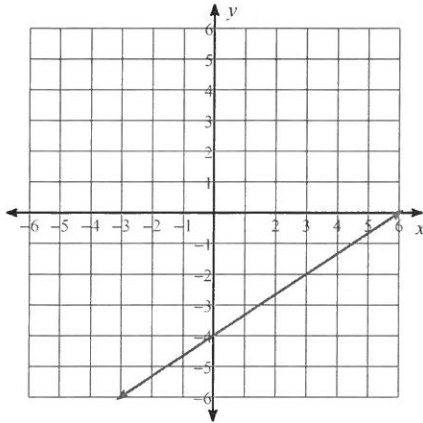
$$x < 2$$



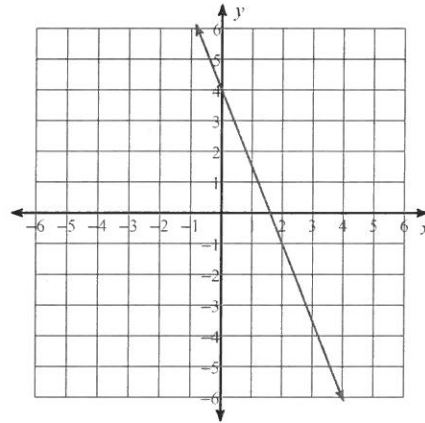
Unit 0 review questions

Sketch the graph of each line.

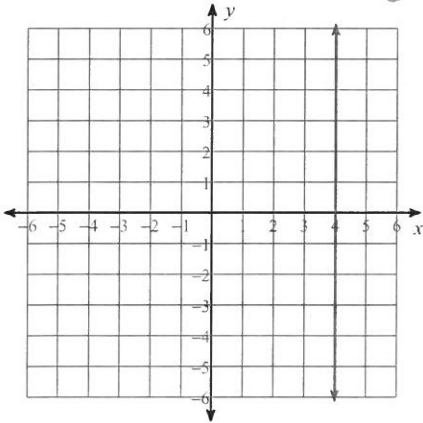
25) $y = \frac{2}{3}x - 4$ $m = \frac{2}{3}$ $b = -4$



26) $y = -\frac{5}{2}x + 4$ $m = 4$ $b = -5/2$

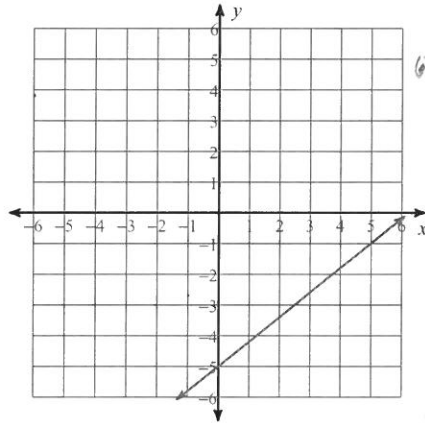


27) $x = 4$ vertical



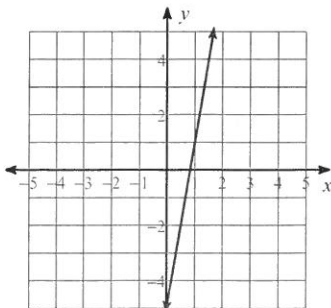
28) $4x - 5y = 25$

x	y
0	-5
25/4	0



Write the slope-intercept form of the equation of each line.

29)



$y = 6x - 5$

Write the slope-intercept form of the equation of each line given the slope and y-intercept.

30) Slope = -3, y-intercept = 1

$y = -3x + 1$

$$7x - 8y = -16 \quad -8y = -7x - 16$$

$$\frac{-8y}{-8} = \frac{-7x - 16}{-8}$$

$$x - y = -2$$

$$\frac{-y}{-1} = \frac{-x - 2}{-1}$$

Write the slope-intercept form of the equation of each line.

31) $7x - 8y = -16$ $y = \frac{7}{8}x + 2$

32) $x - y = -2$
 $y = x + 2$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

33) through: $(-2, -1)$, slope = -2
 $y = -2x - 5$

34) through: $(1, 3)$, slope = 0 horizontal
 $y = 3$

$$y + 1 = -2(x + 2)$$

$$y + 1 = -2x - 4$$

$$y = -2x - 5$$

Write the slope-intercept form of the equation of the line through the given points.

35) through: $(0, -1)$ and $(-1, -3)$ $\frac{-3 - (-1)}{-1 - 0} = \frac{-2}{-1} = 2$
 $y = 2x - 1$

36) through: $(4, -2)$ and $(-4, -3)$ $\frac{-3 - (-2)}{-4 - 4} = \frac{-1}{-8} = \frac{1}{8}$
 $y = \frac{1}{8}x - \frac{5}{2}$

$$y + 2 = \frac{1}{8}(x - 4)$$

$$y + 2 = \frac{1}{8}x - \frac{1}{2}$$

$$y = \frac{1}{8}x - \frac{5}{2}$$

Write the slope-intercept form of the equation of the line described.

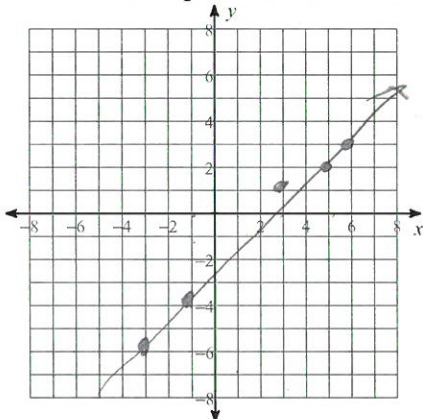
37) through: $(-2, -2)$, parallel to $y = 2x$
 $m = 2$
 $y = 2x + 2$
 $y + 2 = 2(x + 2)$
 $y + 2 = 2x + 4$
 $y = 2x + 2$

38) through: $(4, 5)$, perp. to $y = -\frac{2}{5}x + 2$ $y = \frac{5}{2}x - 5$
 $m = \frac{5}{2}$
 $y - 5 = \frac{5}{2}(x - 4)$
 $y - 5 = \frac{5}{2}x - 10$
 $y = \frac{5}{2}x - 5$

39) Given data: $(3, 1)$ $(5, 2)$ $(-1, -4)$ $(-3, -6)$ $(6, 3)$

40) Using your previous scatterplot and points: $(5, 2)$ $(-1, -4)$

Draw a scatterplot and line of best fit.



Find an equation for your line and predict the value at $x = 7$

$$\frac{-4 - 2}{-1 - 5} = \frac{-6}{-6} = 1$$

$$y - 2 = 1(x - 5)$$

$$y - 2 = x - 5$$

$$y = x - 3$$

$$x = 7 \quad y = 4$$