

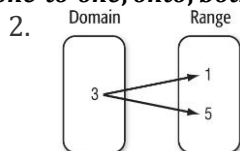
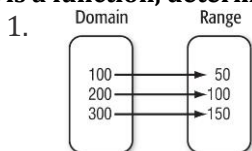
Chapter 2 Study Guide

*****Know your Chapter 2 Vocabulary*****

Name: _____ Date: _____

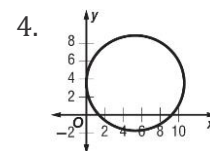
***** THIS IS NOT HOMEWORK*****

Lesson 2.1— State the domain and range of each relation. Then determine whether each relation is a *function*. If it is a function, determine if it is *one-to-one*, *onto*, *both* or *neither*.



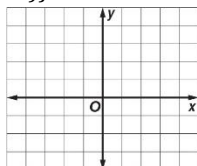
3.

x	y
1	2
2	4
3	6

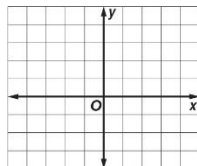


Lesson 2.1— Graph each relation or equation and determine the domain and range. Determine whether the equation is a *function*. Then state whether it is *discrete* or *continuous*.

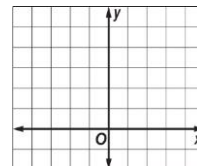
5. $\{(2, -3), (2, 4), (2, -1)\}$



6. $y = -2$



7. $\{(-3, 4), (-2, 4), (-1, -1), (3, -1)\}$



Lesson 2.1— Find each value if $f(x) = 2x - 1$ and $g(x) = 2 - x^2$.

8. $f(0)$

10. $g(4)$

12. $g(-1)$

9. $g(x-2)$

11. $f(-2)$

13. $f(d)$

Lesson 2.2— State whether each function is a linear function. Explain.

14. $f(x) = 4x^2$

15. $\frac{3}{x} + y = 15$

16. $g(x) = 8$

17. $h(x) = \sqrt{x} + 3$

Lesson 2.2— Write each equation in standard form. Identify A, B, and C.

18. $\frac{1}{2}x = \frac{1}{6} - \frac{3}{4}y$

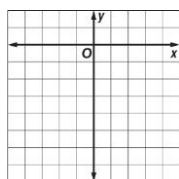
19. $3x = -2y - 2$

20. $5y - 9 = \frac{2}{3}x$

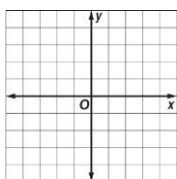
21. $-6y + 14 = 8x$

Lesson 2.2— Find the *x*- and *y*-intercept of each equation. Then graph the equation using the intercepts.

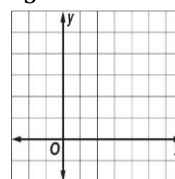
22. $y = 3x - 6$



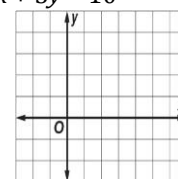
23. $y = -2x$



24. $x + y = 5$



25. $2x + 5y = 10$



Lesson 2.3— Solve the following.

26. Naomi left from an elevation of 7400 feet, *x* at 7 A.M., *y* and hiked to an elevation of 9800 feet by 11 A.M. What was her rate of change in altitude?

Lesson 2.4— Write an equation in slope-intercept form for the line that satisfies each set of conditions.

27. slope 3, passes through (1, -3)

29. passes through (-1, -2) and (-3, 1)

28. slope 3, passes through (2, 0)

30. passes through (-2, -4) and (1, 8)

31. passes through (3, -1), perpendicular to the graph of $y = -\frac{1}{3}x - 4$.

32. parallel to $y = \frac{2}{3}x + 6$, passes through (6, 7)

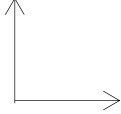
33. parallel to $y = -\frac{1}{4}x - 2$, *x*-intercept at 4

34. perpendicular to $y = -4x + 1$, passes through (-8, -1)

Lesson 2.5— For Exercise 35, use a calculator.

35. The table gives the weights in tons and estimates the fuel economy in miles per gallon for several cars.

- a. Sketch the scatterplot.



Weight (tons)	1.3	1.4	1.5	1.8	2	2.1	2.4
Miles per Gallon	29	24	23	21	?	17	15

- b. Find the correlation coefficient, and describe the correlation. _____
- c. Find the regression equation. _____
- d. Use your equation to predict the missing value. _____

Lesson 2.5— For Exercise 36, complete the example by hand.

36. Alton has a treadmill that uses the time on the treadmill to estimate the number of Calories he burns during a workout. The table gives workout times and Calories burned for several workouts.

Time (min)	18	24	30	40	42	48	52	60
Calories Burned	260	280	320	380	400	440	475	?

- a. Make a scatter plot and a line of fit, and describe the correlation.

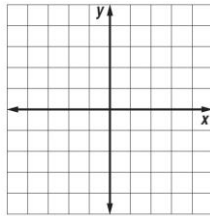


- b. Find the equation of the line of prediction.

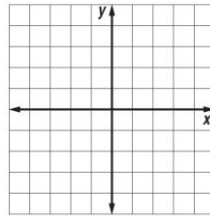
- c. Use your equation to predict the missing value.

Lesson 2.6— Graph each piecewise function.

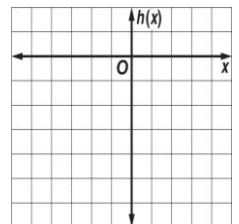
$$37. f(x) = \begin{cases} x + 2 & \text{if } x < 0 \\ 2x + 5 & \text{if } 0 \leq x \leq 2 \\ -x + 1 & \text{if } x > 2 \end{cases}$$



$$38. f(x) = \begin{cases} -x - 4 & \text{if } x < -7 \\ 5x - 1 & \text{if } -7 \leq x \leq 0 \\ 2x + 1 & \text{if } x > 0 \end{cases}$$

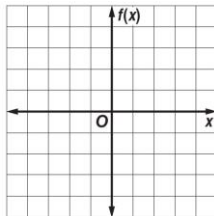


$$39. h(x) = \begin{cases} \frac{x}{3} & \text{if } x \leq 0 \\ 2x - 6 & \text{if } 0 < x < 2 \\ 1 & \text{if } x \geq 2 \end{cases}$$

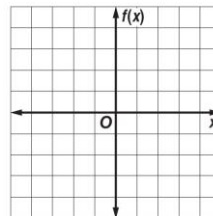


Lesson 2.6— Graph each absolute value function. Identify the domain and range.

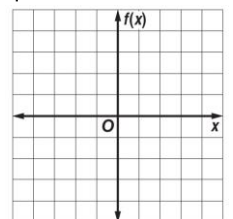
40. $h(x) = |x + 1|$



41. $f(x) = -3|x|$

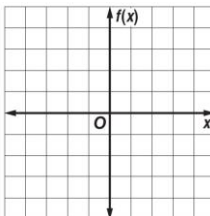


42. $f(x) = |x| - 4$

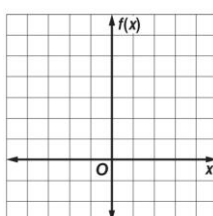


Lesson 2.6— Graph each step function.

43. $f(x) = \llbracket x \rrbracket$



44. $f(x) = \llbracket x \rrbracket + 4$



45. $f(x) = \left\lceil \frac{x}{4} \right\rceil$

