

Algebra 1 Semester 1 Exam Review

Short Answer

Chapter 2

1 $\frac{4}{7}b = 16$ $b = 28$

2 $\frac{3}{8}b = 27$ $b = 72$

3 $-\frac{2}{5}b = -4$ $b = 10$

4 $-16 = 10 - 2y$ $y = 13$

5 $30 = 9 - 3y$ $y = -7$

6 $65 = 20 - 3y$ $y = -15$

7 $10 = 6p - 4 - 5p$ $p = 14$

8 $-12 = 7p - 4 - 5p$ $p = -4$

9 $-50 = 10p - 2 + 2p$ $p = -4$

10 $6x + 3 - 5x = 1 + x + 12$ no sol

11 $16x + 3 - 5x = 1 + 11x + 2$ IMS identity

12 solve $4x - y = p$ for x $x = \frac{p+y}{4}$

13 solve $3x - t = m$ for x $x = \frac{m+t}{3}$

14 solve $-2x + t = m$ for x

$x = \frac{m-t}{-2}$

- 15 Car A travels 300 miles in 4 hours
-
- Car B travels 650 miles in 5 hours
-
- Car C travels 800 miles in 8 hours. Which car travels the fastest? Car B

- 16 Car A travels 300 miles in 7 hours
-
- Car B travels 650 miles in 15 hours
-
- Car C travels 800 miles in 12 hours. Which car travels the fastest? Car C

- 17 Car A travels 1200 miles in 17 hours
-
- Car B travels 950 miles in 19 hours
-
- Car C travels 1800 miles in 32 hours. Which car travels the fastest? Car A

- 18 A car is driving 40 mi/h. What is the speed of the car in feet per minute?
-
- (1 mile=5280 ft and 1 hour=60 min).
- $\frac{3520 \text{ ft}}{1 \text{ min}}$

- 19 A car is driving 30 mi/h. What is the speed of the car in feet per minute?
-
- (1 mile=5280 ft and 1 hour=60 min).
- $\frac{2640 \text{ ft}}{1 \text{ min}}$

- 20 A car is driving 62 mi/h. What is the speed of the car in feet per minute?
-
- (1 mile=5280 ft and 1 hour=60 min).
- $\frac{5456 \text{ ft}}{1 \text{ min}}$

- 21 A factory worker can package 200 games in 18 minutes. How many games can he package per minute?
- $\frac{11 \text{ games}}{1 \text{ min}}$

- 22 A factory worker can package 260 games in 10 minutes. How many games can he package per minute?
- $\frac{26 \text{ games}}{1 \text{ min}}$

- 23 A factory worker can package 315 games in 45 minutes. How many games can he package per minute?

$$\frac{7 \text{ games}}{1 \text{ min}}$$

- 24 School guidelines require that there must be at least 4 chaperones for every 13 students going on a school field trip. If there are 80 students, how many chaperones do you need?

$$x = 24.6 \rightarrow 25 \text{ chaperones}$$

- 25 School guidelines require that there must be at least 3 chaperones for every 18 students going on a school field trip. If there are 250 students, how many chaperones do you need?

$$x = 41.7 \rightarrow 42 \text{ chaperones}$$

- 26 School guidelines require that there must be at least 2 chaperones for every 30 students going on a school field trip. If there are 75 students, how many chaperones do you need?

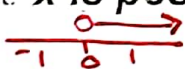
$$x = 5 \rightarrow 5 \text{ chaperones}$$

27 solve $\frac{x-2}{5} = \frac{3}{8}$ $x = 3\frac{7}{8}$ or 3.875

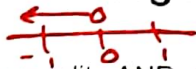
28 solve $\frac{x-4}{6} = \frac{2}{4}$ $x = 7$

29 solve $\frac{x+3}{4} = \frac{6}{7}$ $x = \frac{3}{7}$ or 0.43

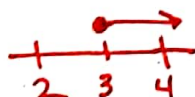
- 30 Draw a number line that correctly show the statement: ***x is positive***



- 31 Draw a number line that correctly show the statement: ***x is negative***



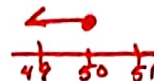
- 32 Write an inequality AND draw a number line that correctly show the statement: ***x is at least 3***



$$x \geq 3$$

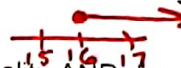
- 33 Write an inequality AND draw a number line that correctly show the statement: ***The capacity of the tank is 50 gallons***

$$x \leq 50$$



- 34 Write an inequality AND draw a number line that correctly show the statement: ***You must be at least 16 to drive.***

$$x \geq 16$$



35 Solve $\frac{m}{-2} \leq 8$ $m \geq -16$

36 Solve $\frac{m}{-5} \leq 10$ $m \geq -50$

37 Solve $\frac{m}{-3} + 7 \leq 1$ $m \geq 18$

- 38 Suppose you had d dollars in your bank account. You spent \$13 but have at least \$30 left. How much money did you have initially? Write and solve an inequality that represents this situation.

$$d - 13 \geq 30 \quad d \geq 43$$

- 39 Suppose you had d dollars in your bank account. You spent \$17 but have at least \$15 left. How much money did you have initially? Write and solve an inequality that represents this situation.

$$d - 17 \geq 15 \quad d \geq 32$$

- 40 Suppose you had d dollars in your bank account. You deposited \$12 but have no more than \$50 now. How much money did you have initially? Write and solve an inequality that represents this situation.

$$d + 12 \leq 50 \quad d \leq 38$$

41 Solve $2(x + 4) > 22$

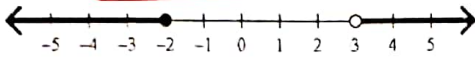
$$x > 7$$

42 Solve $7(x - 5) < 28$

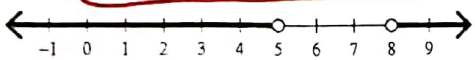
$$x < 9$$

43 Solve $3(4x - 2) < 42$ $x < 4$

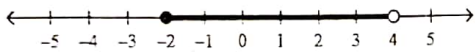
44 Write a compound inequality for the graph below.



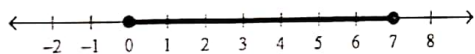
45 Write a compound inequality for the graph below.



46 Write a compound inequality for the graph below.



47 Write a compound inequality for the graph below.



48 A cruise ship can carry up to 2000 passengers. It will only embark on a cruise if at least 1200 passengers buy tickets. Write a compound inequality to show the possible number of passengers the cruise ship can have on its voyage. $1200 \leq x \leq 2000$

49 A cruise ship can carry up to 800 passengers. It will only embark on a cruise if at least 350 passengers buy tickets. Write a compound inequality to show the possible number of passengers the cruise ship can have on its voyage. $350 \leq x \leq 800$

50 Solve the compound inequality $3x + 6 > 12$ or $-4x + 5 > 17$

$x < -3$ or $x > 2$

51 Solve the compound inequality $5x - 3 > 7$ or $4x - 6 < -10$ $x < -1$ or $x > 2$

52 Solve the compound inequality $5x - 7 \leq -3$ or $3x - 2 \geq 13$ $x \leq \frac{4}{5}$ or $x \geq 5$

53 Solve the absolute value equation $|n| + 3 = 7$ $n = 4$
 $n = -4$

54 Solve the absolute value equation $|n| = -10$ no sol

55 Solve the absolute value equation $|n| + 5 = 2$ no sol

56 Solve the absolute value equation $|4x + 1| - 2 = 5$ $x = 1.5$ $x = -2$

57 Solve the absolute value equation $2|x + 4| = 8$ $x = 0$ $x = -8$

58 Give the domain and range of the relation. Tell whether it is a function or not.

x	y
0	7
3	2
-2	5
3	8

D: -2, 0, 3

R: 2, 5, 7, 8

Not a function

59 Give the domain and range of the relation. Tell whether it is a function or not.

x	y
-2	1
-4	1
6	1
8	1

D: -4, -2, 6, 8

R: 1

Is a Function

60 For $f(x) = -6x - 6$ for $f(3)$

$f(3) = -24$

Chapter 4

61 For $f(x) = 2x + 5$ for $f(-4)$

$$f(-4) = -3$$

62 For $f(x) = 2x + 5$ for $f(7)$

$$f(7) = 19$$

63 Write a rule for the situation and decide if it is discrete or continuous.

A store sells apples for \$2 each. What is the cost, C , of a apples?

$$C = 2a \text{ discrete}$$

64 Write a rule for the situation and decide if it is discrete or continuous.

Candy costs \$3.99 per pound. what is the total cost, C , for x lbs of candy?

$$C = 3.99x \text{ continuous}$$

65 The function $f(x) = 34x$ represents how many push-ups Sally can do in x minutes. How many can she do in 3 minutes?

$$102 \text{ p.u.}$$

66 The function $f(x) = 12x$ represents how many push-ups Sally can do in x minutes. How many can she do in 3 minutes?

$$36 \text{ p.u.}$$

67 What vocabulary words can we use for x -values of a function?**Domain, Independent, input.**68 What vocabulary words can we use for y -values of a function?**Range, Dependent, output**

69 Write a function for the table.

x	y
1	1
2	4
3	9
4	16

$$y = x^2$$

70 Write a function for the table.

x	y
0	-2
1	1
2	4
3	7

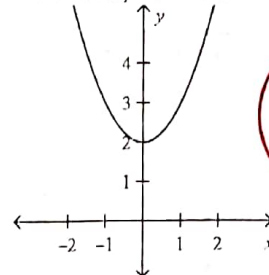
$$y = 3x - 2$$

71 Write a function for the table.

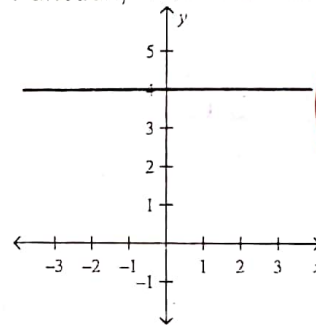
x	y
0	1
1	2
2	5
3	10

$$y = x^2 + 1$$

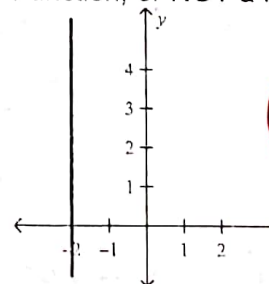
72 Is the graph a Nonlinear Function, Linear Function, or NOT a Function?

**Nonlinear Function**

73 Is the graph a Nonlinear Function, Linear Function, or NOT a Function?

**Linear Function**

74 Is the graph a Nonlinear Function, Linear Function, or NOT a Function?

**Not a Function**