

8 - Semester 1 Study Guide

1. What is 2.1×10^4 written in standard form?

21,000

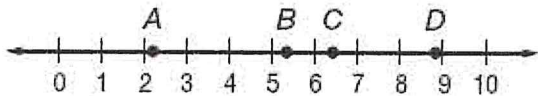
2. In one week there are 10,080 minutes. What is this number in scientific notation?

1.0080×10^4

3. What is the solution of the equation $y^2 = 900$?

$y = \pm 30$

4. Which point is closest to $\sqrt{41}$ on the number line?



point C

5. To which set of numbers does -5.2 belong?

Rational Numbers

6. How is the expression 4^{-2} written using a positive exponent?

$\frac{1}{4^2}$

7. What is the fraction $\frac{3}{11}$ written as a decimal?

$0.\overline{27}$

8 - Semester 1 Study Guide**Translate each sentence into an equation.**

8. The sum of five times a number and
- -6
- is
- -2
- .

$$5n + -6 = -2$$

9. Three less than one-half a number is
- -71
- .

$$\frac{1}{2}n - 3 = -71$$

Solve each equation.

- 10.
- $-5 - 3w = 7w$

$$w = -\frac{1}{2}$$

Solve each equation.

- 11.
- $-3(p + 2) = -30$

$$p = 8$$

- 12.
- $-2y - 3y + 8 = 8 - 5y - 12$

$$\text{Null Set } 8 \neq -4$$

- 13.
- $4x - 2 = 22 - 8x$

$$x = 2$$

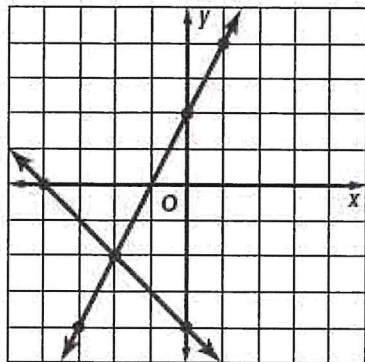
Solve each equation.

- 14.
- $0.3(r + 2) = -0.1(-2r - 4)$

$$r = -2$$

8 - Semester 1 Study Guide

15. Which of the following is the solution of the system of equations shown?



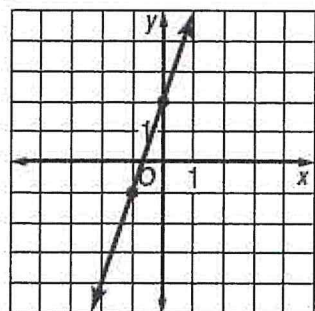
$(-2, -2)$

16. What is the solution of the system of equations?

$y = x - 4$
 $y = -3x$

$(1, -3)$

17. Which is the equation in slope-intercept form for the graph of the line shown?



$y = 3x + 2$

Write an equation in point-slope form and slope-intercept form for the line.

18. passes through (0, 1) and (2, 5)

P.S. $y - 5 = 2(x - 2)$ S.I. $y = 2x + 1$

or
 $y - 1 = 2(x)$

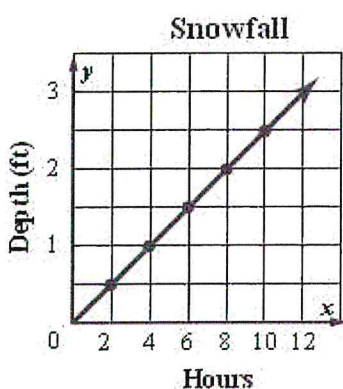
8 - Semester 1 Study Guide

Solve each system of equations by graphing.

19. $y = 3x + 4$
 $y = -x - 4$

$(-2, -2)$

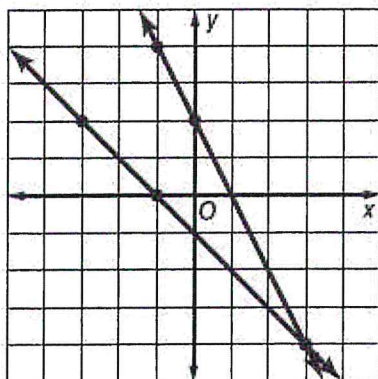
SNOWFALL Use the graph below. It shows the depth in feet of snow after each two-hour period during a snowstorm.



20. Find the slope of the line.

Slope = $\frac{1}{4}$

21. Which of the following is the solution of the system of equations shown?



$(3, -4)$

8 - Semester 1 Study Guide

22. What are the x - and y -intercepts for the graph of $3x - 2y = 6$?

x -intercept: $(2, 0)$
 y -intercept: $(0, -3)$

23. What are the x - and y -intercepts for the graph of $2x - 5y = 10$?

x -intercept: $(5, 0)$
 y -intercept: $(0, -2)$

Find the slope of the line that passes through each pair of points.

24. $A(1, 3), B(4, 7)$

Slope = $\frac{4}{3}$

Indicate the answer choice that best completes the statement or answers the question.

25. Which linear function has the steepest slope?

- a. $y = -5x + 2$
- b. $y = 3x - 7$
- c. $y = x$
- d. $y = -\frac{2}{7}x + 2$

26. Which of the following equations represents a horizontal line?

- a. $y = 3x + 2$
- b. $y = -x + 5$
- c. $y = -2$
- d. $x = -2$

8 - Semester 1 Study Guide

27. Which of the following equations represents a vertical line?

a. $y = 3x + 2$

b. $y = -x + 5$

c. $y = -2$

d. $x = -2$

28. A taxicab service charges \$4.25 plus \$0.30 per mile. Leia takes a taxicab from the hotel to the airport. If the total charge was \$11.75, what is the equation that could be used to determine the number of miles from the hotel to the airport?

$$4.25 + 0.3m = 11.75$$

Indicate the answer choice that best completes the statement or answers the question.

29. Which table represents a linear function?

a.

x	1	2	3	4
y	0	2	6	12

b.

x	-2	0	2	4
y	4	2	1	$\frac{1}{2}$

c.

x	-3	-2	-1	0
y	5	3	1	-1

d.

x	-4	0	4	8
y	1	4	9	16

30. What is the domain of the relation $\{(-2, 4), (1, 3), (0, -4), (3, 2)\}$?

$$\{-2, 0, 1, 3\}$$

8 - Semester 1 Study Guide

31. What is $f(4)$ if $f(x) = 2x - 2$?

$$f(4) = 6$$

32. Student tickets cost \$6.50 each, and adult tickets cost \$9.50 each. Which equation can be used to find the total cost of c of any number of student tickets t ?

$$C = 6.5t$$

33. **COMMISSION** Joshua earns a salary plus a commission for every painting he sells. The equation $c = 40p + 75$, where c is the commission in dollars and p is the number of paintings, represents how much he earns. Martin's commissions are shown in the table. Compare the functions by comparing their y -intercepts and rates of change.

Numbers of Paintings Sold	1	2	3
Commission (\$)	115	150	185

y -intercept:

$$\text{Joshua} = 75$$

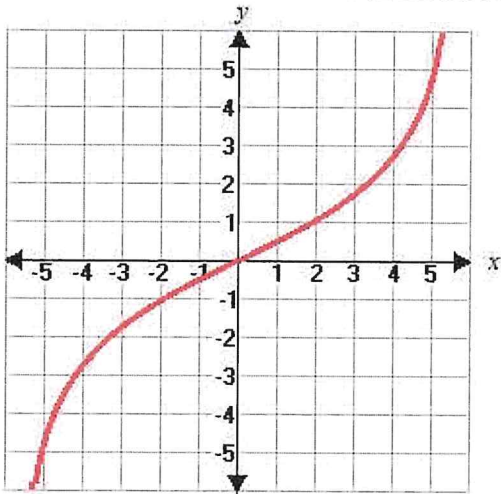
$$\text{Martin} = 80$$

rate of change

$$\text{Joshua} = 40$$

$$\text{Martin} = 35$$

34. Which term describes the function shown below?



Nonlinear