

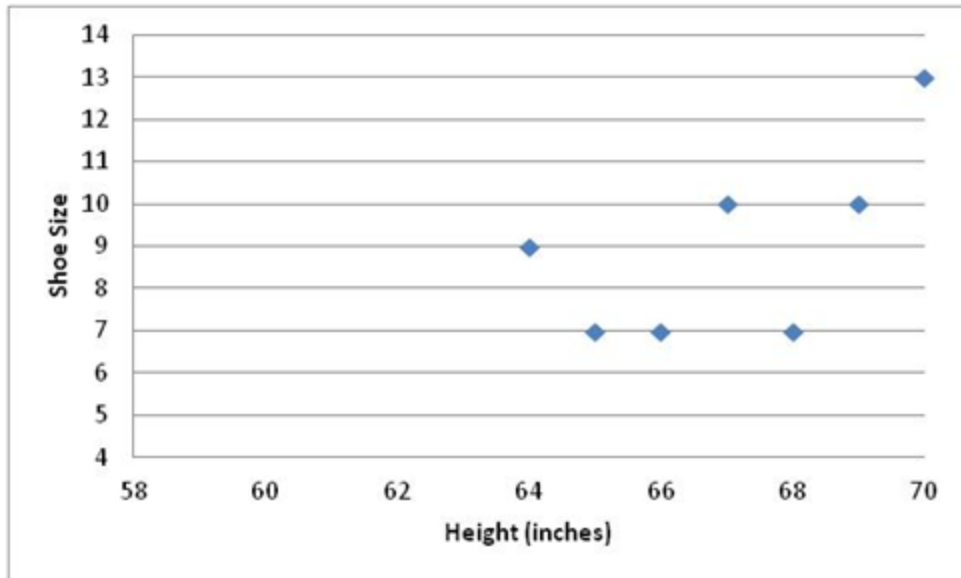
Unit 1

1) Antonio ran a race in 10 seconds. His distances at certain times during the race are shown in the table. What is the domain for the graph of the function that would model his race?

Time in Seconds	0	1	2	3	4	5	6	7	8	9	10
Distance in Feet	0	2	6.5	12	19	34	42	59	77	93	116

- a. $0 \leq x \leq 10$ **
- b. $0 \leq x \leq 116$
- c. $0 \leq y \leq 10$
- d. $0 \leq y \leq 116$

For questions 2-4, refer to this graph:



2) What is the domain of the function shown in the above graph?

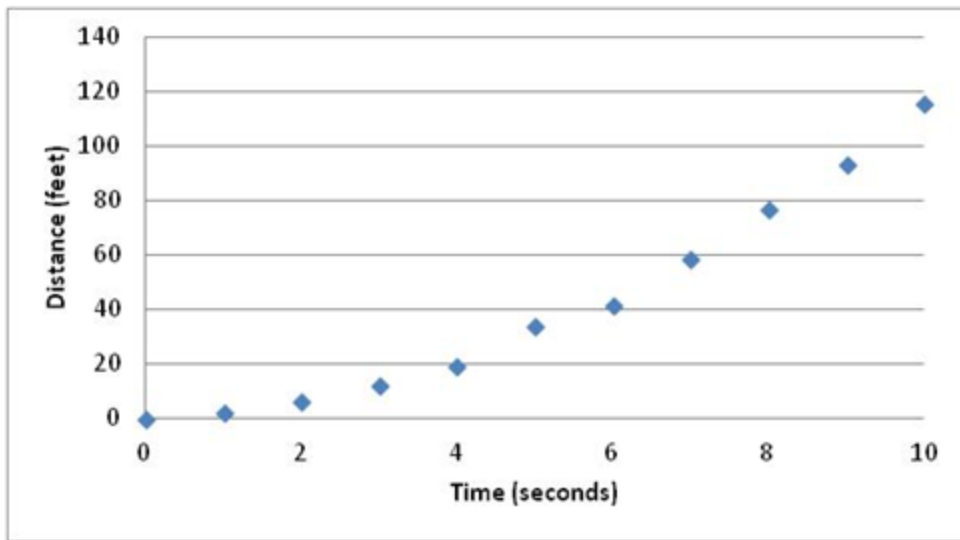
- a. $4 \leq x \leq 14$, where x is a whole number
- b. $64 \leq x \leq 70$, where x is a whole number**
- c. $58 \leq x \leq 70$, where x is a whole number
- d. $58 \leq x \leq 72$, where x is a whole number

3) Are the data shown in the above graph continuous, discrete, or both?

- a. continuous
- b. discrete**
- c. both

4) What is the range of the function shown in the above graph?

- a. $4 \leq y \leq 14$, where y is a whole number
- b. $64 \leq y \leq 70$, where y is a whole number
- c. $58 \leq y \leq 70$, where y is a whole number
- d. $7 \leq y \leq 13$, where y is a whole number**



- 5) Antonio ran a 75-meter race in 10 seconds. Here is a graph of some selected data collected from his race. To represent the problem situation, should the graph be discrete or continuous?
- The graph should be discrete, and the points should not be connected.
 - The graph should be discrete, and the points should be connected.
 - The graph should be continuous, and the points should be connected.**
 - The graph should be continuous, and the points should not be connected.

Unit 3

- 6) Which function rule describes the data in the table?

x	-6	-3	-2	1	3
y	-14	-8	-6	0	4

- $y = 2x + 3$
 - $y = 2x - 2$ **
 - $y = 2x + 1$
 - $y = 2x - 1$
- 7) The cost of shipping a package overnight from Flagstaff to Tucson is \$6.50 plus \$.75 per ounce. Which function rule could you use to find, c, the cost to ship a package that weighs x ounces?
- $c = 6.50x + 0.75$
 - $c = 6.50 - 0.75x$
 - $c = 0.75x + 6.50$ **
 - $c = (0.75 + 6.50)x$
- 8) To calculate, C, the cost of a machined part, a mechanic uses the function rule $C = 75h + p$, where \$75 is the mechanic's hourly rate in dollars, h is the number of hours of labor, and p is the cost of the one time machine set up. If the mechanic took 2 hours to machine the part and the setup cost was \$3,500, what would be the cost to machine the part?
- \$3,550
 - \$3,250
 - \$3,600
 - \$3,650**
- 9) Tiara wants to buy a new smartphone. She saved \$35 last month and plans to save \$20 a month until she saves at least \$200. Which function rule models the relationship between, m, the number of months she will need to save for her smartphone, and, t, her total savings?
- $35m - 20 = t$
 - $35 + 20m = t$ **
 - $35m + 20 = t$
 - $20m - 35 = t$
- 10) Cristina has saved \$5,000 for a new swimming pool. She plans to save an additional \$500 per

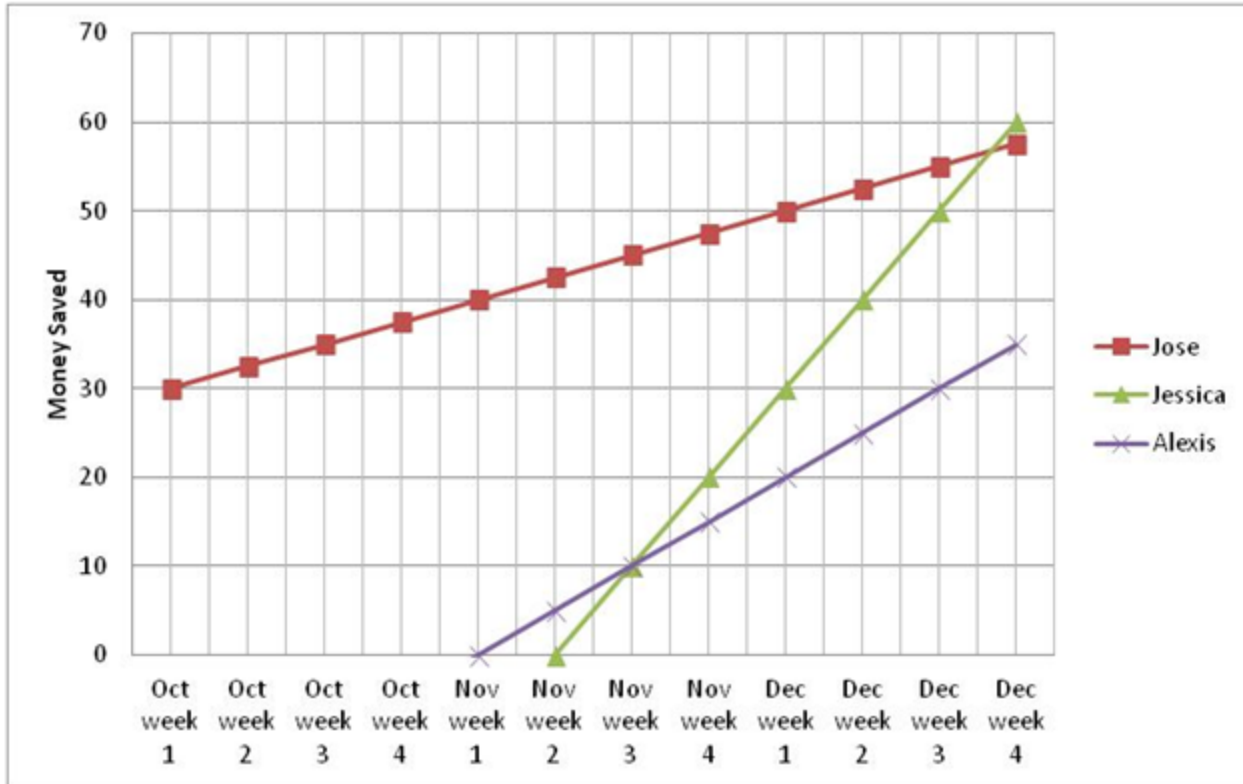
month. A function rule to model the relationship between the number of months she will save, m , and her total savings, s , is $s=5000+500m$. What is the shortest length of time she will need to save money in order to have enough to pay for a swimming pool that costs \$37,000.00?

- a. 64 months**
- b. 72 months
- c. 60 months
- d. 58 months

Unit 4

Saving Money for Presents

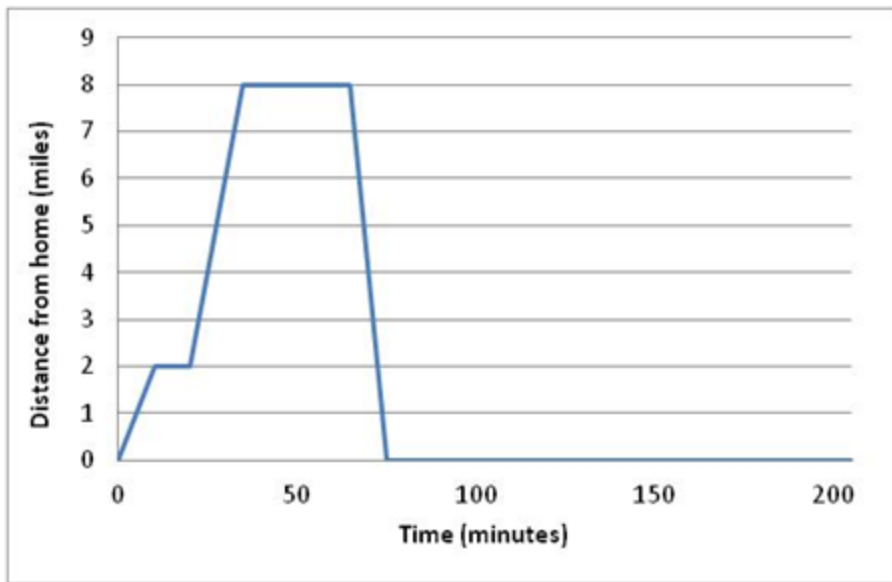
Use the following graph for questions 11-12.



- 11) Who has the most money saved up by the beginning of December Week 3 (the week before Christmas)?
- a. Jose**
 - b. Alexis
 - c. Tie between Jose and Jessica
 - d. Jessica
- 12) During which weeks will Jessica have the same amount of money saved up as Alexis and Jose, respectively?
- a. November Week 2, December Week 4
 - b. November Week 3, December Week 3**
 - c. December Week 3, November Week 2
 - d. November Week 2, December Week 3

Evening on the Town - Graph Story

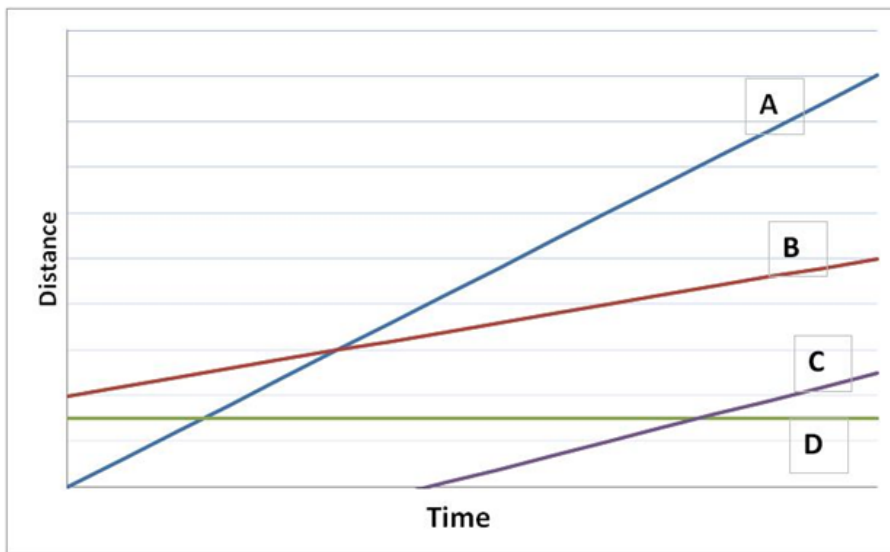
Use the following graph about a Friday evening in Tucson for questions 13-16.



- 13) Which time fragment best represents driving home and watching a movie?
- 20 minutes to 65 minutes
 - 35 minutes to 205 minutes
 - 65 minutes to 205 minutes**
 - 0 minutes to 20 minutes
- 14) Which situation best represents what happened between 10 minutes and 35 minutes?
- Picking up a friend at home and driving to Eegee's**
 - Spending a day at school and driving home
 - Driving straight and then going up a hill
 - Watching a boring movie that gets really exciting (rising action)

Unit 5

- 15) What is the rate of change for the steepest line in the graph?
- 1 mile per 5 minutes
 - 0
 - 2 miles per 5 minutes
 - 4 miles per 5 minutes**
- 16) What does a horizontal line represent in this situation?
- Car driving straight
 - Car driving in circles
 - Car driving backwards
 - Car being parked**
- 17) When calculating rates, what does a negative rate represent on a graph?
- Decreasing line**
 - Increasing line
 - Vertical line
 - Horizontal line
- 18) Put the following graphed rates in order from slowest to fastest.



- a. D, C, B, A b. D, B, C, A**
c. A, C, B, D d. B, D, A, C

19) The following table represents the amount of times blinked per minutes given. Given this table, determine the rate of blinks per minute and fill in the amount of time it takes to blink 600 times.

Min	Blinks
2	24
5	60
6	72
8	96
	600

- a. 75 b. 72
c. 50 d. 48

Unit 6

20) Do the data in this table exhibit a constant rate of change?

Hours	0	3	4	5	8
Pay	\$0.00	\$28.50	\$32.00	\$47.50	\$56.00

- a. Yes. The constant rate of change is \$7.00 per hour.
b. Yes. The constant rate of change is \$8.00 per hour.
c. No. There is not a constant rate of change.**
d. Yes. The constant rate of change is \$9.00 per hour.

21) Do the data in this table represent a linear, quadratic, inverse, or exponential relationship?

x	1	2	3	4	5
y	240	120	80	60	48

- a. linear b. exponential
c. quadratic d. inverse**

22) Do the data in this table represent a linear, quadratic, inverse, or exponential relationship?

x	1	2	3	4	5
y	2	4	8	16	32

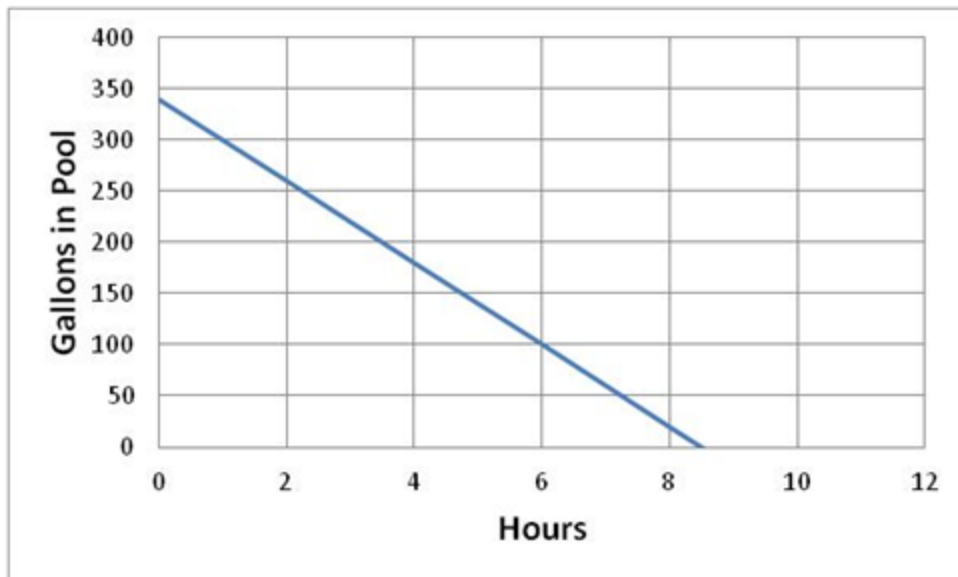
- a. linear
b. exponential**
c. quadratic
d. inverse

23) Do the data in this table represent a linear, quadratic, inverse, or exponential relationship?

<u>Burgers purchased</u>	<u>Money in wallet</u>
0	50
1	45
3	35
6	20
8	10
9	5

- a. linear, and its rate is 5
b. linear, and its rate is -5**
c. linear, and its rate is $\frac{1}{5}$
d. linear, and its rate is $-\frac{1}{5}$

24) Anne is draining water from her pool. In the graph, you can see what happens. Using the graph, what is the rate at which water flows from the hose.



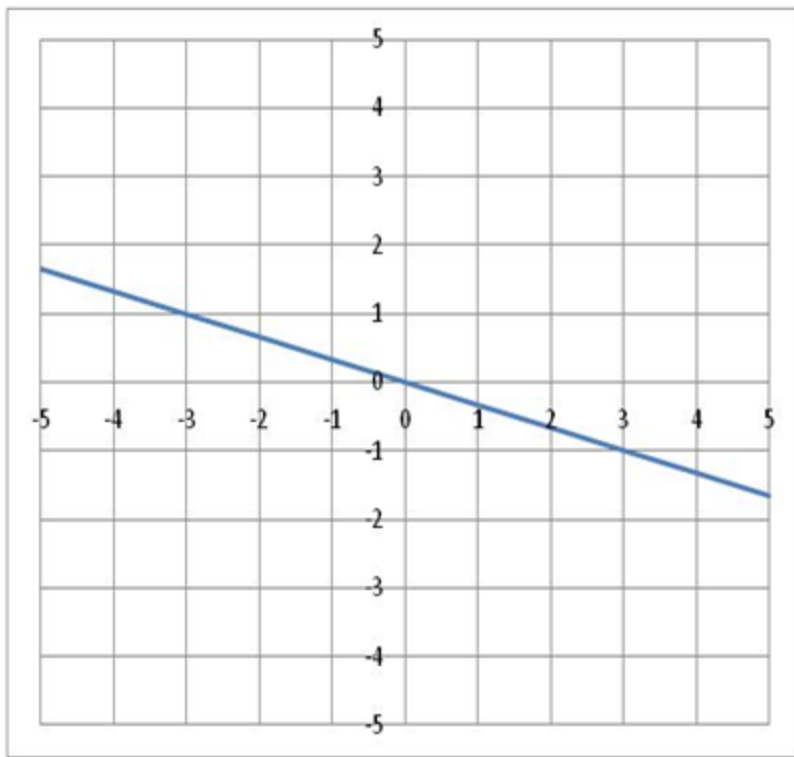
- a. 8 gallons per hour
b. -8 gallons per hour
c. 40 gallons per hour
d. -40 gallons per hour**

Unit 7

25) Olivia has opened a savings account with \$75. At the end of three months, she has \$165 in her account. She deposited the same amount each month during these three months. At what rate has she been making deposits to her savings?

- a. \$30 a week
b. \$30 a month**
c. \$25 a month
d. \$25 a week

26) What is the slope of this graph?



- a. 3
b. -3
c. $-\frac{1}{3}$ **
d. $\frac{1}{3}$

27) What is the slope of the coordinates found in the below table?

x	y
-3	10
-2	8
1	2
2	0
4	-4

- a. 3
b. -3
b. 2
d. -2**

28) A line passes through (4, -6) and (1,0). What is the slope of the line?

- a. -2**
b. -1/2
c. -4/5
d. 4/5

Unit 8

29) Given a slope of $\frac{3}{4}$ and y-intercept of 2, what is the point-slope form of the linear equation?

- a. $y-0 = \frac{3}{4}(x-2)$
b. $y+2 = \frac{3}{4}(x+0)$
c. $y-2 = \frac{3}{4}(x-0)$ **
d. $y+2 = \frac{3}{4}(x+2)$

30) Given the following two points (3, 6) and (5, 12), what is the point-slope form of the linear line?

- a. $y-6 = 3(x-3)$ **
b. $y+12 = 3(x+5)$
c. $y+6 = \frac{1}{3}(x+3)$
d. $y-12 = \frac{1}{3}(x-5)$

- 31) Given an x-intercept of -4 and a y-intercept of 3, what is the standard form of the linear line?
- $4x - 3y = -12$
 - $4x + 3y = 12$
 - $-3x + 4y = 12$
 - $3x - 4y = -12^{**}$
- 32) Given the following equation: $4x - 8y = -40$, what is the x-intercept and y-intercept, respectively?
- $(-10, 5)^{**}$
 - $(2, -5)$
 - $(5, -10)$
 - $(\frac{1}{2}, 10)$
- 33) Identify the general equation for the slope-intercept form of a linear line.
- $Ax + By = C$
 - $y - y_1 = m(x - x_1)$
 - $y = mx + b^{**}$
 - $\frac{\text{rise}}{\text{run}}$

Vocabulary

For questions 34 - 44, pick the answer that best defines the given vocabulary word.

- 34) Definition: A relationship between two changing quantities in which the ratio between the two quantities is constant.
- Coordinate
 - Factor
 - Rate
 - Proportional Relationship
- 35) Definition: In a function, it determines what happens to another variable in the function.
- Dependent Variable
 - Inverse Function
 - Independent Variable*
 - Linear Function
- 36) Definition: In a function, it changes when another value changes.
- Dependent Variable*
 - Inverse Function
 - Independent Variable
 - Linear Function
- 37) Definition: A relationship between two quantities in which one quantity is associated with a unique value of the other quantity.
- Constant of Proportionality
 - Function*
 - Slope
 - Domain
- 38) Definition: A relationship between two variables whose graph forms a straight line.
- Linear Function*
 - Inverse Function
 - Exponential Function
 - Quadratic Function
- 39) Definition: A physical model of a problem or a problem situation.
- Graphical Representation
 - Symbolic Representation
 - Concrete Representation*
 - Numerical Representation
- 40) Definition: The measure of the steepness of a line.
- Y-Intercept
 - Linear
 - Function
 - Slope*
- 41) Definition: A ratio that compares two quantities measured with different units.
- Proportion
 - Rate*
 - Function
 - Factor
- 42) Definition: A set of values, x and y, that show an exact location on a graph.
- Ordered Pair
 - Range
 - Factor
 - Equation
- 43) Definition: All the possible values for the independent variable.
- Rate
 - Domain*
 - Dependent Variable
 - Range
- 44) Definition: All the possible values for the dependent variable.
- Rate
 - Domain
 - Independent Variable
 - Range*

Version 2 (the one not sent to schools yet)

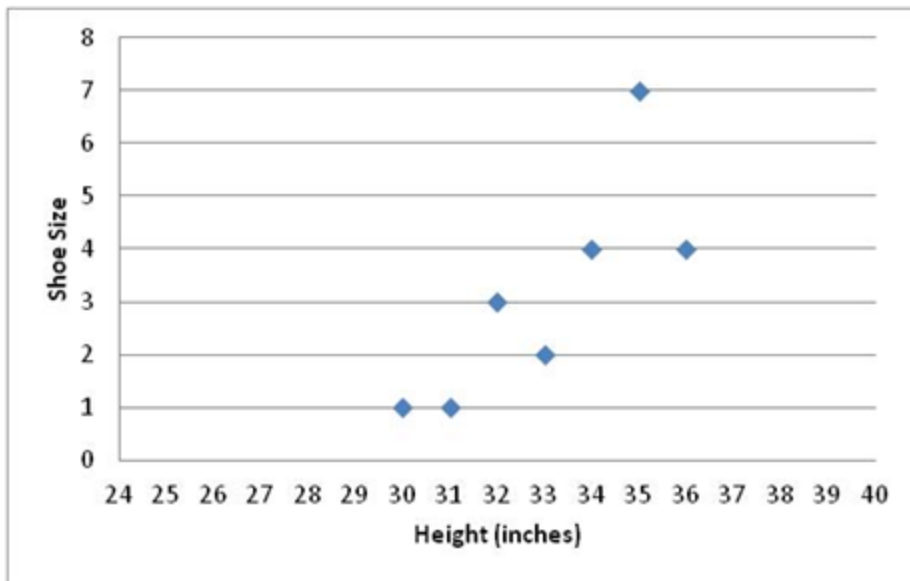
Unit 1

1) Antonio ran a race in 10 seconds. His distances at certain times during the race are shown in the table. What is the domain for the graph of the function that would model his race?

Time in Seconds	0	1	2	3	4	5	6	7	8	9	10
Distance in Feet	0.5	2.5	8	13	20	32	41	54	70	87	117

- a. $0 \leq x \leq 10$ **
- b. $0.5 \leq x \leq 117$
- c. $0 \leq y \leq 10$
- d. $0.5 \leq y \leq 117$

For questions 2-4, refer to this graph:



2) What is the domain of the function shown in the above graph?

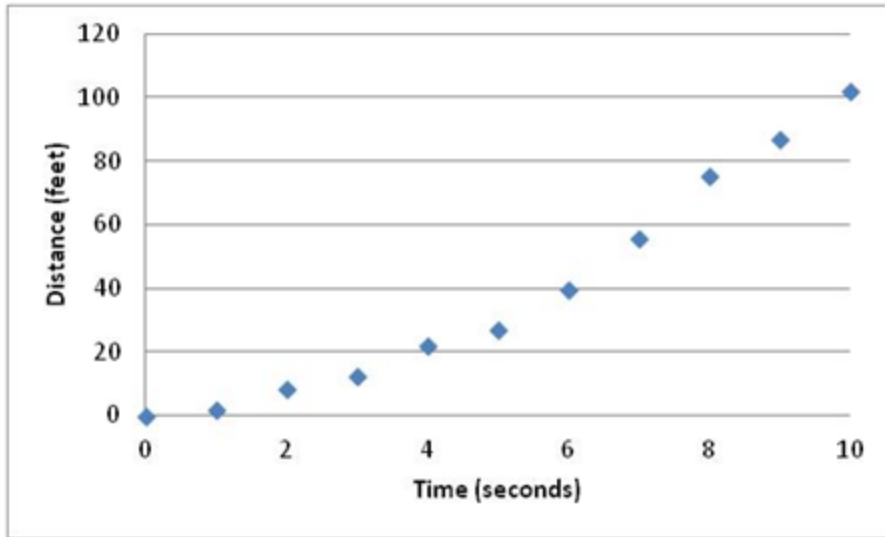
- a. $0 \leq x \leq 8$, where x is a whole number
- b. $30 \leq x \leq 36$, where x is a whole number**
- c. $24 \leq x \leq 40$, where x is a whole number
- d. $30 \leq x \leq 40$, where x is a whole number

3) Are the data shown in the above graph continuous, discrete, both or neither?

- a. continuous
- b. discrete**
- c. both
- d. neither

4) What is the range of the function shown in the above graph?

- a. $0 \leq y \leq 8$, where y is a whole number
- b. $30 \leq y \leq 36$, where y is a whole number
- c. $24 \leq y \leq 40$, where y is a whole number
- d. $1 \leq y \leq 7$, where y is a whole number**



- 5) Antonio ran a race in 10 seconds. Here is a graph of some selected data collected from his race. To represent the problem situation, should the graph be discrete or continuous?
- a. The graph should be discrete and the points should not be connected.
 - b. The graph should be discrete and the points should be connected.
 - c. The graph should be continuous and the points should be connected.**
 - d. The graph should be continuous and the points should not be connected.

Unit 3

- 6) Which function rule describes the data in the table?

x	-6	-3	-2	1	3
y	-9	-3	-1	5	9

- a. $y = 2x + 3$ **
 - b. $y = 2x - 2$
 - c. $y = 2x + 1$
 - d. $y = 2x - 1$
- 7) The cost of shipping a package overnight from Flagstaff to Tucson is \$8.25 plus \$0.55 per ounce. Which function rule could you use to find, c , the cost to ship a package that weighs x ounces?
- a. $c = 8.25x + 0.55$
 - b. $c = 8.25 - 0.55x$
 - c. $c = 0.55x + 8.25$ **
 - d. $c = (0.55 + 8.25)x$
- 8) To calculate, C , the total cost to rent a moving van, the company uses the function rule $C = 5m + p$, where 5 is the price per mile, m is the number of miles, and p is the initial cost to check out. If you drove 25 miles and it cost \$30 to check out the van, what would the total price of the van be?
- a. \$175
 - b. \$30
 - c. \$55
 - d. \$155**
- 9) Tiara wants to buy a new smartphone. She saved \$50 last month and plans to save \$15 a month until she saves at least \$200. Which function rule models the relationship between, m , the number of months she will need to save for her phone, and, t , her total savings?
- a. $50m - 15 = t$
 - b. $50 + 15m = t$ **

c. $50m+15=t$

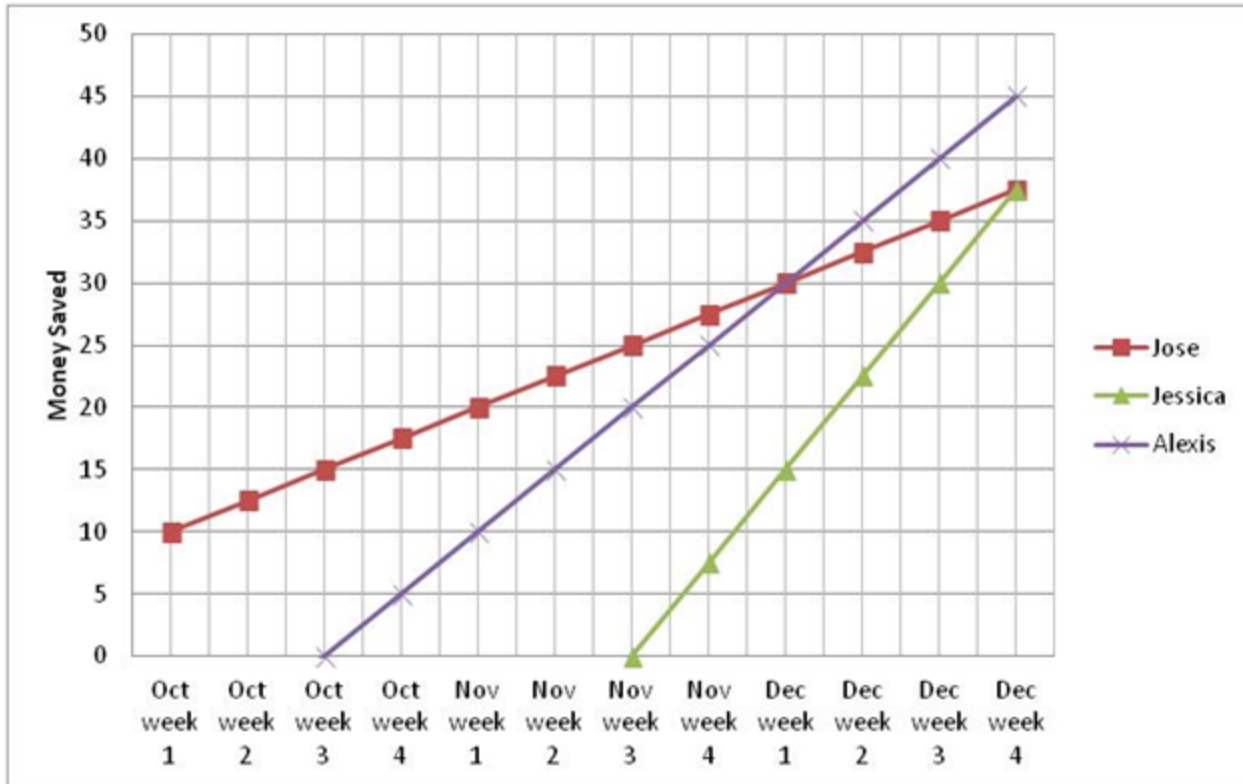
d. $15m-50=t$

- 10) Cristina has saved \$9,000 for a new swimming pool. She plans to save an additional \$500 per month. A function rule to model the relationship between the number of months she will save, m , and her total savings, s , is $s=9000+500m$. What is the shortest length of time she will need to save money in order to have enough to pay for a swimming pool that costs \$38,000.00?
- a. 64 months b. 72 months
c. 60 months d. 58 months**

Unit 4

Saving Money for Presents

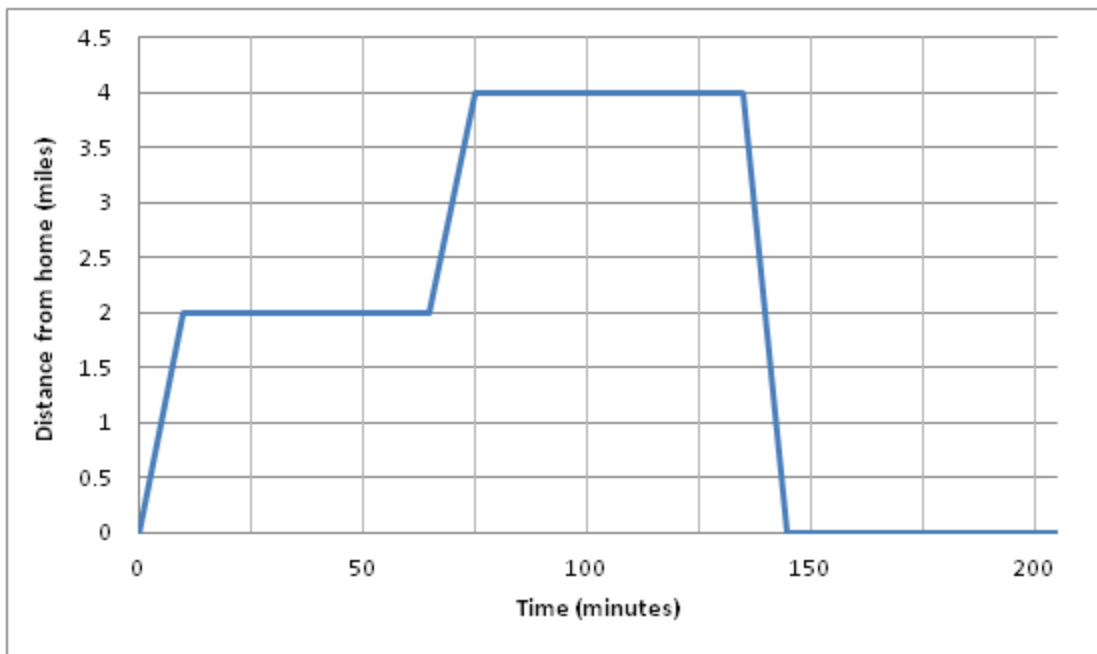
Use the following graph for questions 11-12.



- 11) Who has the most money saved up by the beginning of December Week 3 (the week before Christmas)?
- a. Jose b. Alexis**
c. Tie between Jose and Jessica d. Jessica
- 12) During which weeks will Jose have the same amount of money saved up as Alexis and Jessica, respectively?
- a. November Week 2, December Week 4 b. December Week 1, December Week 4**
c. December Week 1, December Week 3 d. November Week 2, December Week 3

Out in Tucson - Graph Story

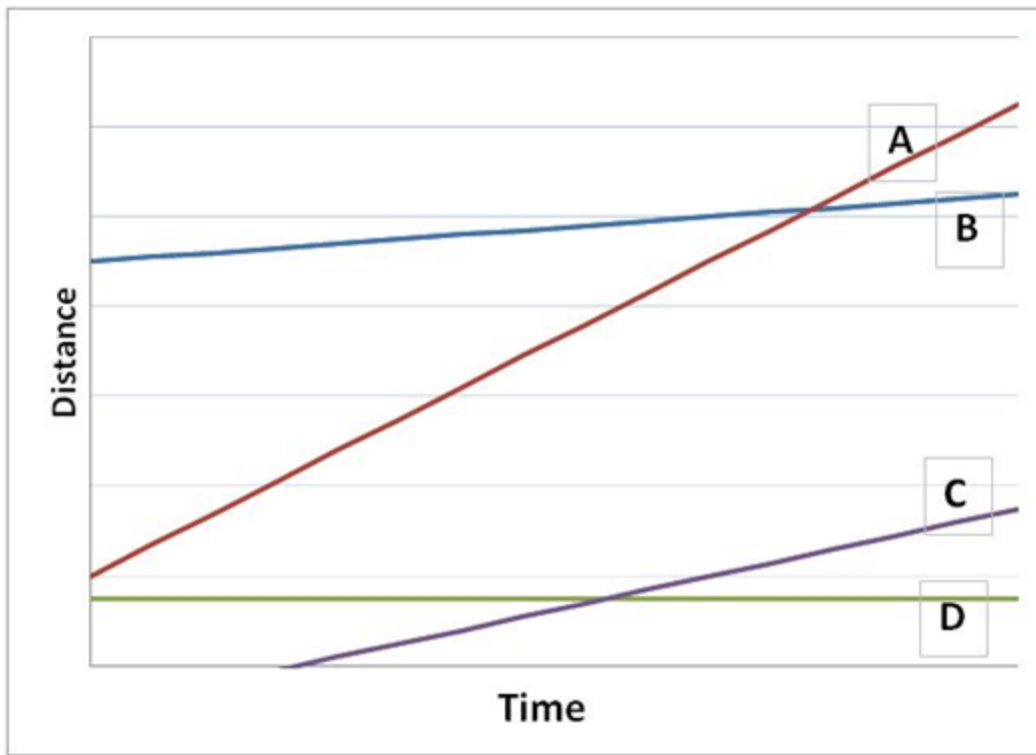
Use the following graph about a Friday evening in Tucson for questions 13-16.



- 13) Which time period best represents driving home and watching a movie?
- 10 minutes to 65 minutes
 - 75 minutes to 205 minutes
 - 135 minutes to 205 minutes**
 - 0 minutes to 20 minutes
- 14) Which situation best represents what happened between 10 minutes and 65 minutes?
- Picking up a friend at home and driving to Eegee's
 - Stopping at restaurant to eat**
 - Driving straight and then going up a hill
 - Watching an exciting movie that gets really boring (falling action)

Unit 5

- 15) What is the rate of change for the steepest line in the graph?
- 1 mile per 5 minutes
 - 0 miles per 5 minutes
 - 2 miles per 5 minutes
 - 4 miles per 5 minutes**
- 16) What does a horizontal line represent in this situation?
- Car driving straight
 - Car driving in circles
 - Car driving backwards
 - Car being parked**
- 17) How is a zero rate represented on a graph?
- Decreasing line
 - Increasing line
 - Vertical line
 - Horizontal line**
- 18) Which answer choice shows the graphed rates in order from slowest to fastest?



- a. D, C, B, A b. D, B, C, A**
c. A, C, B, D d. B, D, A, C

- 19) The following table represents the amount of times blinked per minute. Given this table, determine the rate of blinks per minute and fill in the amount of time it takes to blink 576 times.

Min	Blinks
2	24
5	60
6	72
8	96
	576

- a. 75 b. 72
c. 50 d. 48**

Unit 6

- 20) Do the data in this table exhibit a constant rate of change?

Hours	0	3	4	5	8
Pay	\$0.00	\$24.00	\$32.00	\$40.00	\$64.00

- a. Yes. The constant rate of change is \$7.00 per hour.
b. Yes. The constant rate of change is \$8.00 per hour. **
c. No. There is not a constant rate of change.
d. Yes. The constant rate of change is \$9.00 per hour.

21) Do the data in this table represent a linear, quadratic, inverse, or exponential relationship?

x	1	2	3	4	5
y	2	4	8	16	32

- a. linear
b. exponential**
c. quadratic
d. inverse

22) Do the data in this table represent a linear, quadratic, inverse, or exponential relationship?

x	1	2	3	4	5
y	240	120	80	60	48

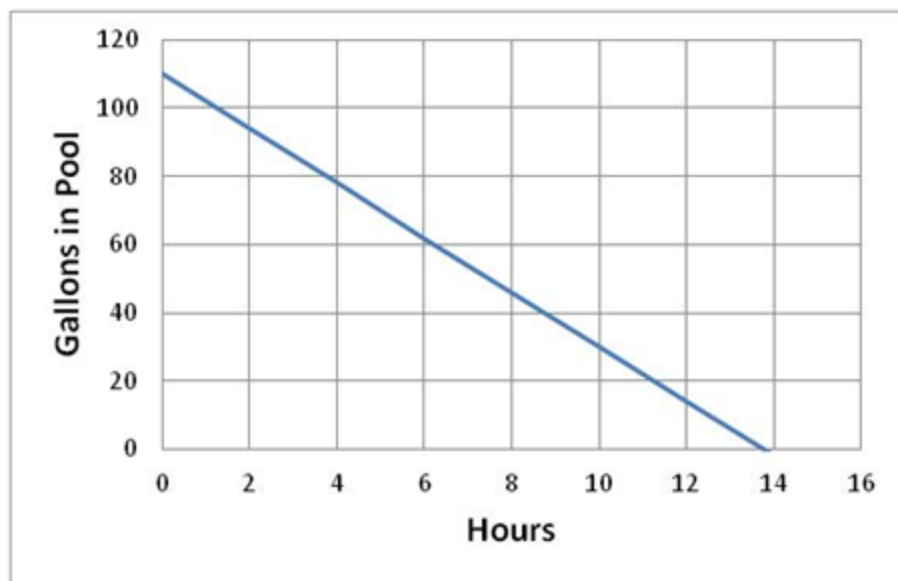
- a. linear
b. exponential
c. quadratic
d. inverse**

23) Do the data in this table represent a linear, quadratic, inverse, or exponential relationship?

<u>Burgers purchased</u>	<u>Money in wallet</u>
0	\$50.00
1	\$49.80
3	\$49.40
6	\$48.80
8	\$48.40
9	\$48.20

- a. linear, and its rate is 5
b. linear, and its rate is -5
c. linear, and its rate is $\frac{1}{5}$
d. linear, and its rate is $-\frac{1}{5}$ **

24) Anne is draining water from her pool. In the graph, you can see what happens. Using the graph, what is the rate at which water flows from the hose.



- a. 8 gallons per hour
b. -8 gallons per hour**

c. 40 gallons per hour

d. -40 gallons per hour

Unit 7

- 25) Cindy has opened a checking account with \$55. At the end of four months, she has \$215 in her account. She deposited the same amount each month during these four months. At what rate has she been making deposits to her checking account?

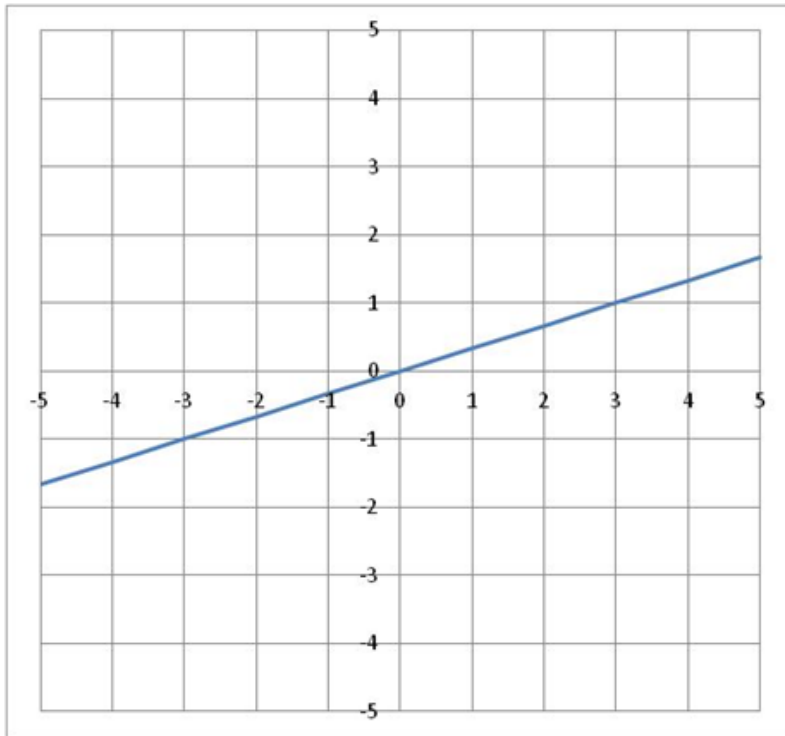
a. \$20 per week

b. \$53.75 per month

c. \$55 per month

d. \$40 per month**

- 26) What is the slope of this graph?



a. 3

b. -3

c. $-\frac{1}{3}$

d. $\frac{1}{3}$ **

- 27) What is the slope of the coordinates found in the table?

x	y
-3	-2
-2	0
1	6
2	8
4	12

a. 3

b. -3

b. 2**

d. -2

- 28) A line passes through (-2, 5) and (3, 15). What is the slope of the line?

a. $\frac{1}{2}$

b. 10

c. 2**

d. -5

Unit 8

- 29) Given a slope of $\frac{7}{8}$ and y-intercept of 4, what is the point-slope form of the linear equation?
- a. $y-4 = \frac{7}{8}(x-0)**$ b. $y+4 = \frac{7}{8}(x+0)$
c. $y-0 = \frac{7}{8}(x-4)$ d. $y+0 = -\frac{8}{7}(x+4)$
- 30) Given the two points (1, 8) and (3, 18), what is the point-slope form of the linear equation?
- a. $y-8 = 5(x-18)$ b. $y+1 = \frac{1}{5}(x+3)$
c. $y-3 = \frac{1}{5}(x+18)$ d. $y-18 = 5(x-3)**$
- 31) Given an x-intercept of -6 and a y-intercept of 5, what is the standard form of the linear equation?
- a. $5x - 6y = -30**$ b. $-6x + 5y = 30$
c. $-5x + 6y = -30$ d. $-6x + 5y = -30$
- 32) Given the following equation: $-3x + 4y = 24$, what are the x-intercept and y-intercept, respectively?
- a. (-3, 0) and (0, 4) b. (12, 0) and (0, 24)
c. (6, 0) and (0, 8) d. (-8, 0) and (0, 6)**
- 33) Identify the general equation for the point-slope form of a line.
- a. $Ax + By = C$ b. $y - y_1 = m(x - x_1)**$
c. $y = mx + b$ d. rise/run

Vocabulary

For questions 34 - 44, pick the answer that best matches the definition.

- 34) Definition: A relationship between two changing quantities in which the ratio between the two quantities is constant.
- a. Coordinate c. Rate
b. Factor d. Proportional Relationship**
- 35) Definition: In a function, it changes when another value changes.
- a. Dependent Variable** c. Independent Variable
b. Inverse Function d. Linear Function
- 36) Definition: A relationship between two quantities in which one quantity is associated with a unique value of the other quantity.
- a. Constant of Proportionality c. Slope
b. Function** d. Domain
- 37) Definition: A relationship between two variables whose graph forms a straight line.
- a. Linear Function** c. Exponential Function
b. Inverse Function d. Quadratic Function
- 38) Definition: All the possible values for the independent variable.
- a. Rate c. Dependent Variable
b. Domain** d. Range
- 39) Definition: A physical model of a problem or a problem situation.
- a. Graphical Representation c. Concrete Representation**
b. Symbolic Representation d. -Numerical Representation
- 40) Definition: The measure of the steepness of a line.
- a. Y-Intercept c. Function
b. Linear d. Slope**
- 41) Definition: In a function, it determines what happens to another variable in the function.
- a. Dependent Variable c. Independent Variable**
b. Inverse Function d. Linear Function
- 42) Definition: A ratio that compares two quantities measured with different units.
- a. Proportion c. Function
b. Rate** d. Factor
- 43) Definition: A set of values, x and y, that show an exact location on a graph.

a. Ordered Pair*

b. Range

c. Factor

d. Equation

44) Definition: All the possible values for the dependent variable.

a. Rate

b. Domain

c. Independent Variable

d. Range**