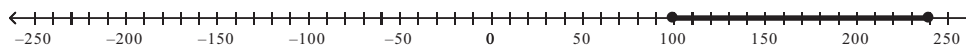
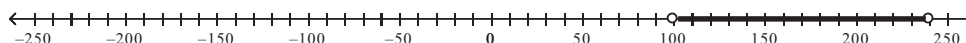


59. Fly with Us owns a D.C.10 airplane that has seats for 240 people. The company flies this airplane only if there are at least 100 people on the plane. Write a compound inequality to show the possible number of people in a flight on a D.C.10 with Fly with Us. Let n represent the possible number of people in the flight. Graph the solutions.

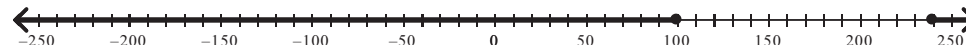
A.) $100 \leq n \leq 240$



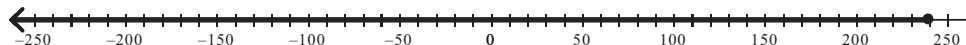
B.) $100 < n < 240$



C.) $100 \geq n \geq 240$

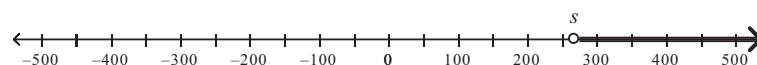


D.) $n \leq 240$

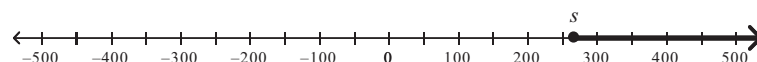


60. Sam earned \$450 during winter vacation. He needs to save \$180 for a camping trip over spring break. He can spend the remainder of the money on music. Write an inequality to show how much he can spend on music. Then, graph the inequality.

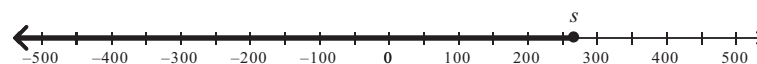
A.) $450 + s > 180$; $s > 270$



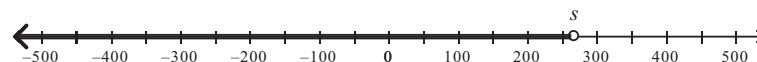
B.) $180 + s \geq 450$; $s \geq 270$



C.) $180 + s \leq 450$; $s \leq 270$



D.) $450 + s < 180$; $s < 270$



A1.2.1.1

Analyze and/or use patterns or relations.

61. Find the 20th term in the arithmetic sequence $-4, 1, 6, 11, 16, \dots$

A.) 95

C.) 96

B.) 72

D.) 91

62. Determine whether the sequence appears to be an arithmetic sequence. If so, find the common difference and the next three terms in the sequence.

$$-5, -11, -17, -23, -29, \dots$$

- A.) Yes; common difference 6; next three terms are $-23, -17, -11$
- B.) Not an arithmetic sequence
- C.) Yes; common difference -7 ; next three terms are $-36, -43, -50$
- D.) Yes; common difference -6 ; next 3 terms are $-35, -41, -47$

63. Sylvie is going on vacation. She has already driven 60 miles in one hour. Her average speed for the rest of the trip is 57 miles per hour. How far will Sylvie have driven 7 hours later?

- A.) 402 miles
- B.) 420 miles
- C.) 459 miles
- D.) 399 miles

64. Do the ordered pairs below represent a relation, a function, both a relation and a function, or neither a relation nor a function?

$$(-3, 5), (3, -7), (7, -15), (9, -19)$$

- A.) function only
- B.) neither a relation nor a function
- C.) both a relation and a function
- D.) relation only

65. Which of the following tables represents a function?

A.

X	-12	-8	0	-8
Y	22	20	22	21

C.

X	-12	-8	-12	3
Y	22	22	28	21

B.

X	-12	-8	0	3
Y	22	20	28	22

D.

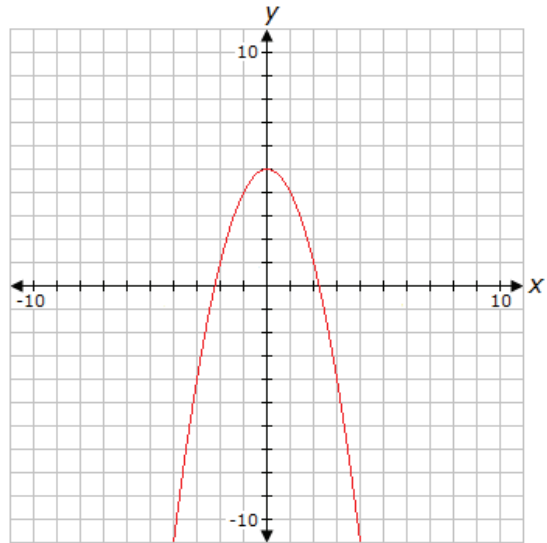
X	-12	-8	0	0
Y	22	20	22	21

66. Which of the following relations describes a function?

- A.) $\{ (2, 3), (3, 3), (4, 3), (5, 3) \}$
- B.) $\{ (-2, 0), (0, -2), (0, 2), (2, 0) \}$
- C.) $\{ (0, 0), (2, -2), (2, 2), (3, 3) \}$
- D.) $\{ (3, 3), (3, 4), (3, 5), (3, 6) \}$

67. Find the domain of the function: $y = -x^2 + 5$

- A.) {all real numbers}
- B.) {all real numbers greater than or equal to five}
- C.) {all real numbers less than five}
- D.) {all real numbers between negative three and three}



68. The elements of a function of x are (7, 8), (70, 17), and (700, 107). What is the domain of the function?

- A. {693}
- B. {7, 8, 17, 70, 107, 700}
- C. {7, 8, 70}
- D. {7, 70, 70}

69. According to the table below, what is the range of the data?

input	output
3	9
4	16
5	25
6	36
7	49

- A.) 12, 20, 30, 42, 56
- B.) 3, 4, 5, 6, 7
- C.) 9, 16, 25, 36, 49
- D.) 6, 8, 10, 12, 14

A1.2.1.2

Interpret and/or use linear functions and their equations, graphs, or tables.

70. At PTHS, t-shirts sell for \$17.56 and cost \$12.01 to produce. Which equation represents p , the profit, in terms of x , the number of t-shirts sold?

- A.) $p = \$17.56 + \$12.01x$ C.) $p = \$17.56x - \12.01
B.) $p = x(\$17.56 - \$12.01)$ D.) $p = x(\$17.56 + \$12.01)$

71. The population of a small town, P , as a function of time, t , in years past 1940 is:

$$P = 2,111 + 375t$$

For which of the following years was the population of the town 16,736 .

- A.) 1979 C.) 1939
B.) 1989 D.) 1949

72. Alex is flying 2,075 miles. The table below shows the number of miles left to go after each hour of travel time.

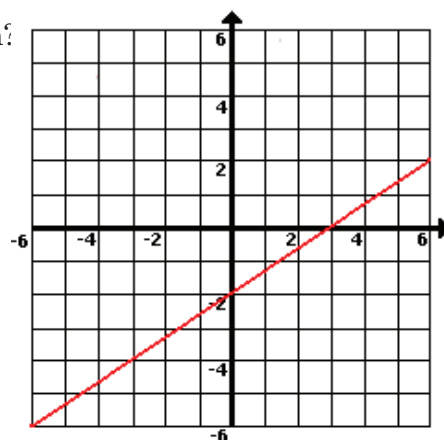
Hour (x)	Miles (y)
1	1,881
2	1,687
3	1,493
4	1,299

If Alex continues at the current rate, how many miles will he have remaining after traveling for 7 hours?

- A.) 911 miles C.) 523 miles
B.) 707 miles D.) 717 miles

73. Which of the following functions matches the graph?

- A.) $f(x) = -\frac{2}{3}x + 2$
B.) $f(x) = \frac{2}{3}x - 2$
C.) $f(x) = \frac{2}{3}x + 2$
D.) $f(x) = \frac{3}{2}x - 3$



74. Which of the following tables corresponds to the graph below?

A.)

x	-3	-2	-1	0	1
y	-1	$-\frac{2}{3}$	$-\frac{1}{3}$	$-\frac{2}{3}$	-1

B.)

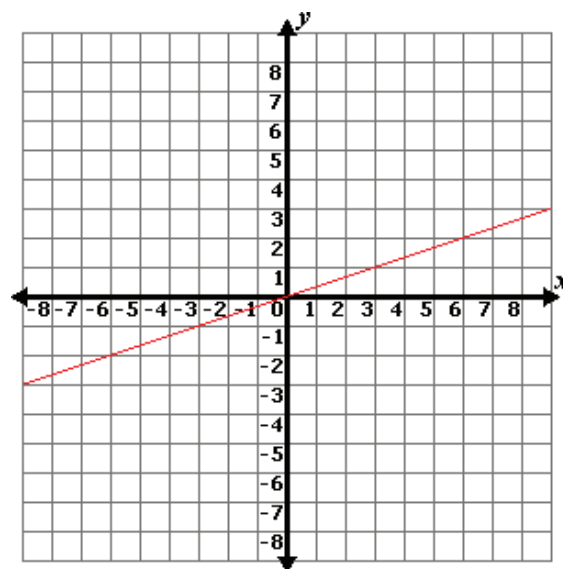
x	-3	-2	-1	0	1
y	-1	$-\frac{2}{3}$	$-\frac{1}{3}$	0	$\frac{1}{3}$

C.)

x	-3	-2	-1	0	1
y	-1	$-\frac{2}{3}$	$-\frac{1}{3}$	0	$-\frac{1}{3}$

D.)

x	-3	-2	-1	0	1
y	-1	$-\frac{2}{3}$	$\frac{1}{3}$	0	$\frac{1}{3}$



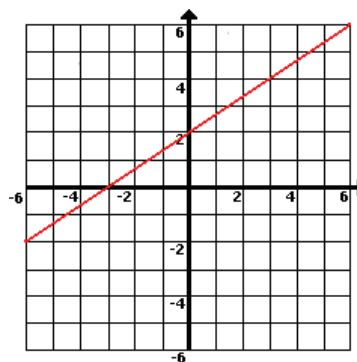
75. Which of the following functions matches the graph?

A.) $f(x) = -\frac{2}{3}x + 2$

B.) $f(x) = -\frac{3}{2}x + 3$

C.) $f(x) = \frac{3}{2}x + 3$

D.) $f(x) = \frac{2}{3}x + 2$



A1.2.2.1

Describe, compute, and/or use the rate of change (slope) of a line.

76. Which of the following situations represents a linear relationship?

A.) A radioactive substance loses half of its mass every 12 years.

B.) The cost of living increases in a certain area by 3 percent each year.

C.) The volume of a cubical gift box depends on the side length of the box.

D.) Someone is losing 5 pounds every month on her diet.

77. A pizza buffet has prepared 18 pizzas to place on the line at the beginning of lunch at 11:00 a.m. The equation $y = 14x + 18$ can be used to describe the total number of pizzas that have been placed out on the buffet line, where x represents every 9 minutes after 11:00 a.m. Which statement best describes the rate of change in the number of pizzas set out on the buffet?

- A.) Every 18 minutes, 38 more pizzas were set out on the buffet.
- B.) Every 18 minutes, 28 more pizzas were set out on the buffet.
- C.) Every 9 minutes, 24 more pizzas were set out on the buffet.
- D.) Every 18 minutes, 14 more pizzas were set out on the buffet.

78. Robert is making a map for Geography. In order to draw the map, he must create a scale converting the measured inches on the map to actual miles.

Length in Inches	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$
Length in Miles	45	54	63	81	90	99

Use the table above to identify the scale he used for his map.

- A.) 1 in. = 36 miles
- B.) 1 in. = 12 miles
- C.) 1 in. = 9 miles
- D.) 1 in. = 18 miles

79. Write an equation in slope-intercept form for the line that passes through (3, 7) and (7, 4).

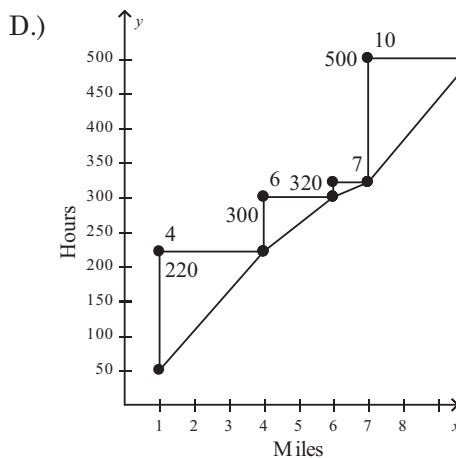
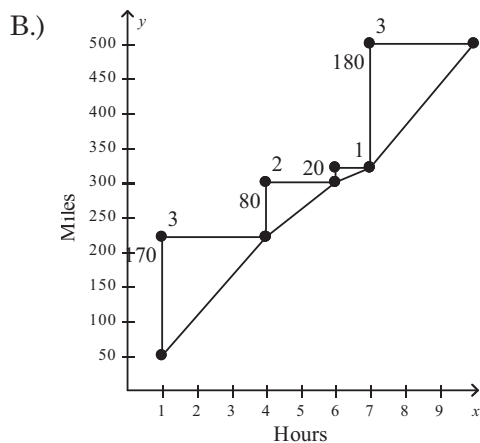
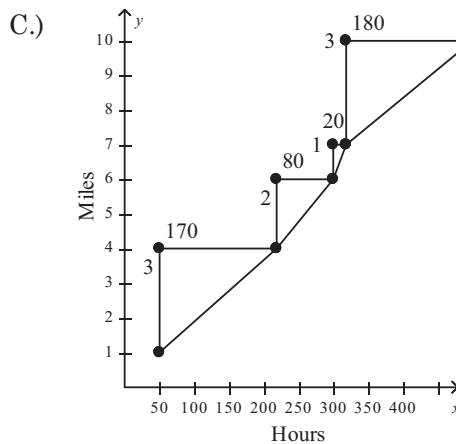
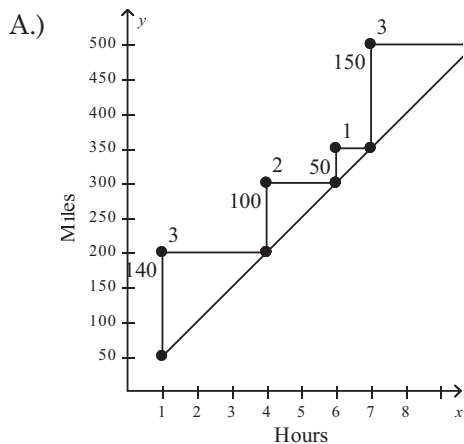
- A.) $y = -\frac{3}{4}x + \frac{37}{4}$
- B.) $y = \frac{3}{4}x + \frac{37}{4}$
- C.) $y = -\frac{4}{3}x + \frac{37}{4}$
- D.) $y = -\frac{3}{4}x + \frac{4}{37}$

80. Find the x - and y -intercepts of $-x + 2y = 8$.

- A.) x -intercept: -11, y -intercept: 4
- B.) x -intercept: -11, y -intercept: 3
- C.) x -intercept: -8, y -intercept: 3
- D.) x -intercept: -8, y -intercept: 4

81. Jim drove for several hours, recording the distance he had traveled in miles. Graph the data and show the rates of change.

Hours	1	4	6	7	10
Miles	50	220	300	320	500



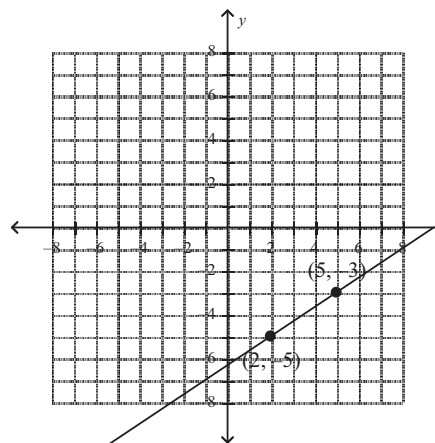
82. Find the slope of the line.

A.) $-\frac{3}{5}$

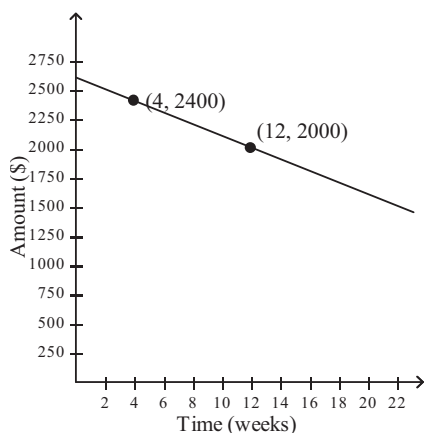
C.) $\frac{3}{2}$

B.) $\frac{2}{3}$

D.) $-\frac{2}{3}$

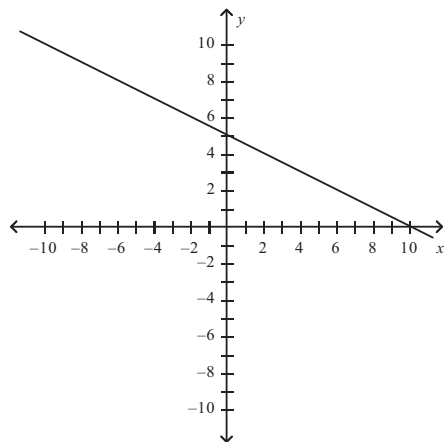


83. Tara creates a budget for her weekly expenses. The graph shows how much money is in the account at different times. Find the slope of the line. Then tell what rate the slope represents.



- A.) The slope is -50 . The slope means that the amount of money in the account is decreasing at a rate of \$50 every week.
- B.) The slope is -50 . The slope means that the amount of money in the account is decreasing at a rate of \$50 every 2 weeks.
- C.) The slope is -0.02 . The slope means that the amount of money in the account is decreasing at a rate of \$0.02 every week.
- D.) The slope is 50. The slope means that the amount of money in the account is increasing at a rate of \$50 every week.

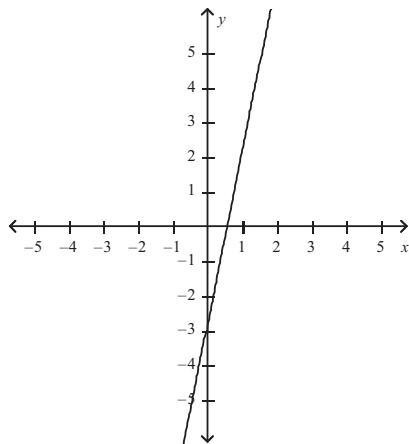
84. Find the x - and y -intercepts.



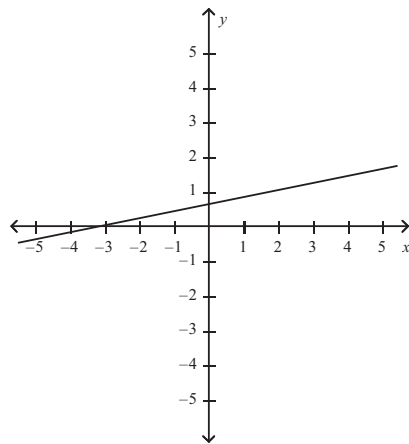
- A.) x -intercept: -10 , y -intercept: 5
- B.) x -intercept: 5, y -intercept: 10
- C.) x -intercept: 10, y -intercept: -5
- D.) x -intercept: 10, y -intercept: 5

85. Tell whether the function $y = 5x - 3$ is linear. If so, graph the function.

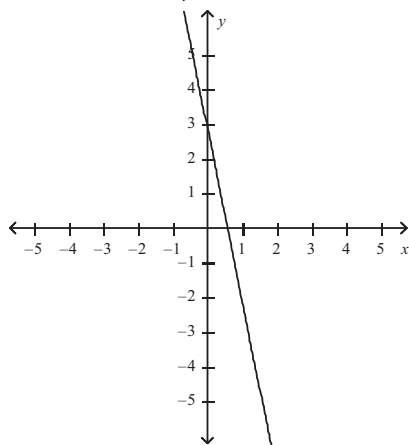
A.)



C.)



B.)



D.) Not a linear function.

A1.2.2.2

Analyze and/or interpret data on a scatter plot.

86. The graph shows a line of best fit for data collected on the amount of water bills in relation to the number of gallons of water used. What is the equation of the line of best fit?

- A.) $y = \frac{1}{4}x + \frac{49}{4}$
 B.) $y = \frac{7}{4,000}x + \frac{49}{4}$
 C.) $y = -\frac{1}{4}x + \frac{49}{4}$
 D.) $y = -\frac{7}{4,000}x + \frac{49}{4}$

