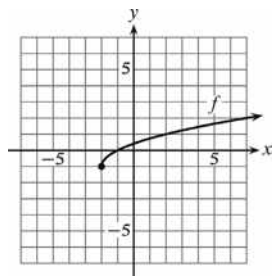


Name _____

1. Let a function f be represented symbolically by $f(x) = 8 - x^2$. Find $f(-1)$. 1. _____
 (A) 9 (B) 10
 (C) 7 (D) -6

2. Determine which set of ordered pairs does **not** represent a function. 2. _____
 (A) $\{(1, 1), (0, 2), (1, 3), (0, 2)\}$ (B) $\{(1, 1), (2, 2), (3, 3), (4, 2)\}$
 (C) $\{(1, 4), (2, 3), (3, 1), (4, 1)\}$ (D) $\{(1, 1), (2, 0), (3, 1), (4, 0)\}$

3. Use the graph of f to determine its domain. 3. _____



- (A) $[-1, \infty)$
 (B) $[-1, 2)$
 (C) $[-2, \infty)$
 (D) $(-\infty, \infty)$

4. Lake Buchanan, one of the Highland lakes located in central Texas, covers 1.12×10^8 square feet and contains a total volume of 4.10×10^9 cubic feet of water. Find the average depth of Lake Buchanan. 4. _____
 (A) 3.66 feet (B) 366 feet
 (C) 3.66×10^{-1} feet (D) 36.6 feet

5. If possible, find the slope of the line passing through $(-2.8, 6.3)$ and $(-4.3, 1.5)$. 5. _____
 (A) 0.3125 (B) -3.2
 (C) undefined (D) 3.2

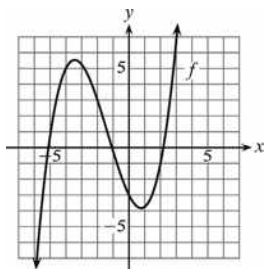
6. The table displays the monthly rainfall for Hilo, Hawaii, for the first six months in a typical year. Find the mean rainfall to the nearest tenth of an inch for these six months. 6. _____

Month	Jan	Feb	Mar	Apr	May	Jun
Rainfall (inches)	26.1	19.0	10.8	7.4	15.0	7.2

- (A) 12.9 in. (B) 14.3 in.
 (C) 18.7 in. (D) 85.5 in.

7. Use the graph of f to evaluate $f(-2)$.

7. _____



- (A) -1
- (B) 2.5
- (C) 3
- (D) -4.8

8. Find the domain of $f(x) = \frac{1}{\sqrt{x-4}}$.

8. _____

- (A) $x = 4$
- (B) $(4, \infty)$
- (C) $(-\infty, 4)$
- (D) $(-\infty, 4) \cup (4, \infty)$

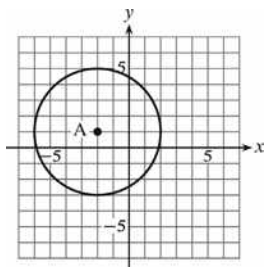
9. Find the midpoint of the line segment joining the points $(5.3, -6.1)$ and $(-2.8, 1.1)$.

9. _____

- (A) $(1.25, -2.5)$
- (B) $(4.05, -3.6)$
- (C) $(-0.4, -0.85)$
- (D) $(5.7, -195)$

10. Find the equation of the circle.

10. _____



- (A) $(x - 2)^2 + (y + 1)^2 = 4$
- (B) $(x + 2)^2 + (y - 1)^2 = 16$
- (C) $(x + 2)^2 + (y - 1)^2 = 4$
- (D) $(x - 2)^2 + (y + 1)^2 = 16$

11. Find the distance between the points $(12.1, 13.5)$ and $(-5.6, -10.1)$ to the nearest tenth.

11. _____

- (A) 53.8
- (B) 29.5
- (C) 41.3
- (D) 9.9

12. Find the domain and range of the relation

12. _____

$$S = \{(-5.2, 1.6), (3.5, -2.9), (-4.9, 3.2), (6.5, -1.0), (-2.1, 6.1)\}.$$

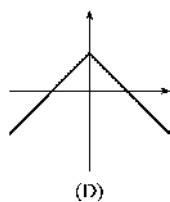
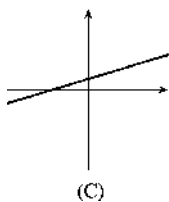
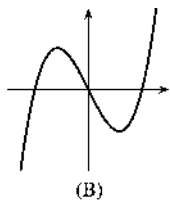
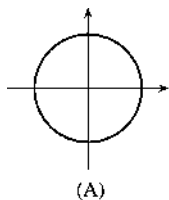
- (A) $D = \{-5.2, 1.6, 3.5, -2.9, -4.9\}$
 $R = \{3.2, 6.5, -1.0, -2.1, 6.1\}$
- (B) $D = \{1.6, -2.9, 3.2, -1.0, 6.1\}$
 $R = \{-5.2, 3.5, -4.9, 6.5, -2.1\}$
- (C) $D = \{-1.5, -6.0, 1.2, 9.4, 1.7\}$
 $R = \{4.9, -1.4, -6.2, 1.2, 4.1\}$
- (D) $D = \{-5.2, 3.5, -4.9, 6.5, -2.1\}$
 $R = \{1.6, -2.9, 3.2, -1.0, 6.1\}$

13. In 2000 the population of Juneau, Alaska was 30,711 and in 2010 it was 31,275. Use the midpoint formula to estimate Juneau's population in 2005. 13. _____
- (A) 30,183 (B) 30,311
(C) 30,366 (D) 30,993

14. The data displayed in the table are linear. State the slope m of the line passing through the data points. 14. _____

X	-1	0	1	2	3
Y	-8	-5	-2	1	4

- (A) $m = -3$ (B) $m = \frac{1}{3}$
(C) $m = 3$ (D) $m = -\frac{1}{3}$
15. Which of the following is **not** the graph of a function? 15. _____



16. Write a symbolic representation (formula) of a function g that computes the number of dollars in x dimes. 16. _____
- (A) $g(x) = \frac{x}{10}$ (B) $g(x) = 10x$
(C) $g(x) = \frac{x}{0.10}$ (D) $g(x) = \frac{10}{x}$

17. The function P defined by 17. _____

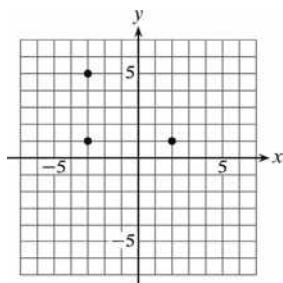
$$P(t) = t^2 + 4t + 33$$

models the number of diagnostic machines produced by a medical equipment manufacturer yearly, where $t = 0$ corresponds to the first year of production, 2000. Find the average rate of change in the number of machines produced per year between 2005 and 2010.

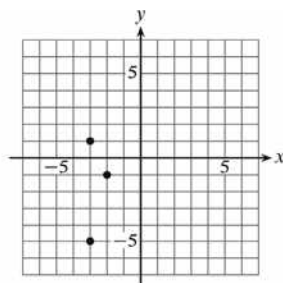
- (A) 25 machines/year (B) 17 machines/year
(C) 19 machines/year (D) 40 machines/year

18. Plot the relation $\{(-3, 1), (2, 1), (5, -3)\}$ in the xy -plane.

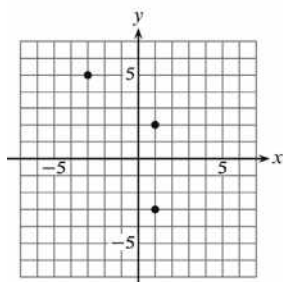
18. _____



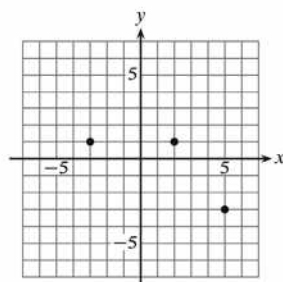
(A)



(B)



(C)



(D)

19. The table shows the Pizzazz-Zee corporation’s monthly income for the first 6 months of last year in thousands of dollars. Find its median monthly income for this period to the nearest thousand dollars.

19. _____

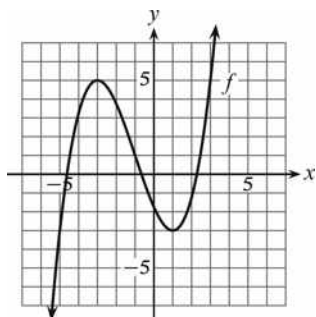
Month	Jan	Feb	Mar	Apr	May	Jun
Income	32	312	92	212	272	188

- (A) \$185,000
- (C) \$200,000

- (B) \$554,000
- (D) \$280,000

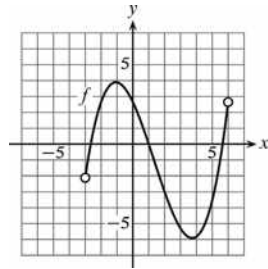
20. Use the graph to determine the intervals on which f is increasing and where it is decreasing.

20. _____



- (A) Increasing: $(-\infty, 5)$ $(-3, \infty)$
Decreasing: $(-3, 1)$
- (B) Increasing $(-\infty, -3)(1, \infty)$
Decreasing: $(-3, 1)$
- (C) Increasing: $(-3, \infty)$
Decreasing: $(5, -\infty)$
- (D) Increasing: $(1, \infty)$
Decreasing: $(-3, -\infty)$

1. Let a function f be represented symbolically by $f(x) = 10 - x^2$. Find $f(-3)$. 1. _____
 (A) 34 (B) -16
 (C) 19 (D) 1
2. Use the graph of f to determine its domain. 2. _____



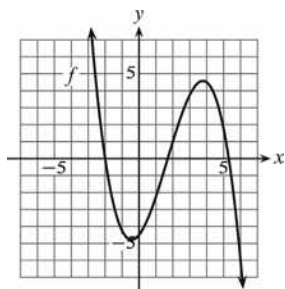
- (A) $[-6, 5]$
 (B) $(-3, 6)$
 (C) $(-\infty, \infty)$
 (D) $(-2.7, 5.7)$
3. If possible, find the slope of the line passing through $(2.1, -5.3)$ and $(5.6, -10.9)$. 3. _____
 (A) -1.6 (B) -0.625
 (C) undefined (D) 1.6
4. Lake Mead, formed by the construction of the Hoover Dam, covers 7.59×10^8 square feet and contains a total volume of 1.37×10^{11} cubic feet of water. Find the average depth of Lake Mead. 4. _____
 (A) 180.5 feet (B) 1,805 feet
 (C) 1.805×10^{-3} feet (D) 18.05 feet
5. Determine which set of ordered pairs does **not** represent a function. 5. _____
 (A) $\{(1, -2), (2, 0), (3, 0), (4, 4)\}$ (B) $\{(1, -4), (2, 0), (3, 0), (4, 2)\}$
 (C) $\{(4, 1), (0, 2), (0, 3), (4, 4)\}$ (D) $\{(1, 1), (2, 0), (3, 0), (4, -4)\}$
6. The table displays the monthly rainfall for Hilo, Hawaii, for the last six months in a typical year. Find the mean monthly rainfall to the nearest tenth of an inch for these six months. 6. _____

Month	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall (inches)	7.0	13.7	8.1	6.5	2.9	10.5

- (A) 48.7 in. (B) 7.6 in.
 (C) 24.4 in. (D) 8.1 in.

7. Use the graph of f to evaluate $f(-2)$.

7. _____



- (A) 0
- (B) 1
- (C) 5
- (D) -3.3

8. Find the domain of $f(x) = \frac{1}{\sqrt{5-x}}$.

8. _____

- (A) $x = 5$
- (B) $(-\infty, 5)$
- (C) $(5, \infty)$
- (D) $(-\infty, 5) \cup (5, \infty)$

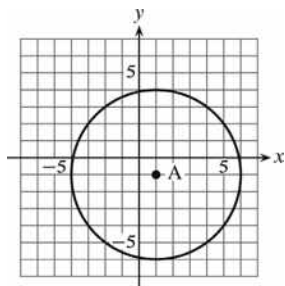
9. Find the midpoint of the line segment joining the points $(-3.1, -6.5)$ and $(6.8, -3.7)$.

9. _____

- (A) $(-4.95, -1.4)$
- (B) $(-4.8, 1.55)$
- (C) $(1.7, 5.25)$
- (D) $(1.85, -5.1)$

10. Find the equation of the circle.

10. _____



- (A) $(x-1)^2 + (y+1)^2 = 25$
- (B) $(x+1)^2 + (y-1)^2 = 5$
- (C) $(x+1)^2 + (y-1)^2 = 25$
- (D) $(x-1)^2 + (y+1)^2 = 5$

11. Find the distance between the points $(-7.3, -1.47)$ and $(-4.5, 1.47)$ to the nearest hundredth.

11. _____

- (A) 5.74
- (B) 16.48
- (C) 11.80
- (D) 4.06

12. Find the domain and range of the relation

12. _____

$$S = \{(1.7, -3.2), (-3.7, -2.3), (-2.5, 3.7), (5.3, 4.1), (2.9, -1.2)\}.$$

- (A) $D = \{-3.2, -2.3, 3.7, 4.1, -1.2\}$
 $R = \{1.7, -3.7, -2.5, 5.3, 2.9\}$
- (B) $D = \{1.7, -3.7, -2.5, 5.3, 2.9\}$
 $R = \{-3.2, -2.3, 3.7, 4.1, -1.2\}$
- (C) $D = \{1.7, -3.2, -3.7, -2.3, -2.5\}$
 $R = \{3.7, 5.3, 4.1, 2.9, -1.2\}$
- (D) $D = \{-1.5, -6.0, 1.2, 9.4, 1.7\}$
 $R = \{4.9, -1.4, -6.2, 1.2, 4.1\}$

13. In 2000 the population of Albuquerque, New Mexico was 448,362 and in 2010 it was 545,852. Use the midpoint formula to estimate Albuquerque’s population in 2005. 13. _____

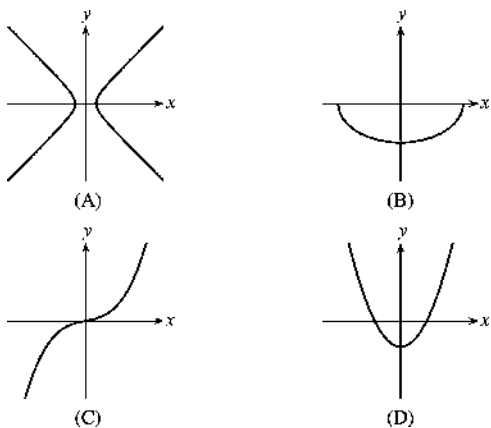
- (A) 497,107 (B) 498,298
 (C) 500,135 (D) 496,641

14. The data displayed in the table are linear. State the slope m of the line passing through the data points. 14. _____

X	-2	0	2	4	6
Y	4	1	-2	-5	-8

- (A) $m = -\frac{3}{2}$ (B) $m = \frac{2}{3}$
 (C) $m = -\frac{2}{3}$ (D) $m = \frac{3}{2}$

15. Which of the following is **not** the graph of a function? 15. _____



16. Write a symbolic representation (formula) of a function g that computes the number of dimes in x dollars. 16. _____

- (A) $g(x) = 0.10x$ (B) $g(x) = \frac{x}{10}$
 (C) $g(x) = 10x$ (D) $g(x) = \frac{x}{0.10}$

17. The function P defined by 17. _____

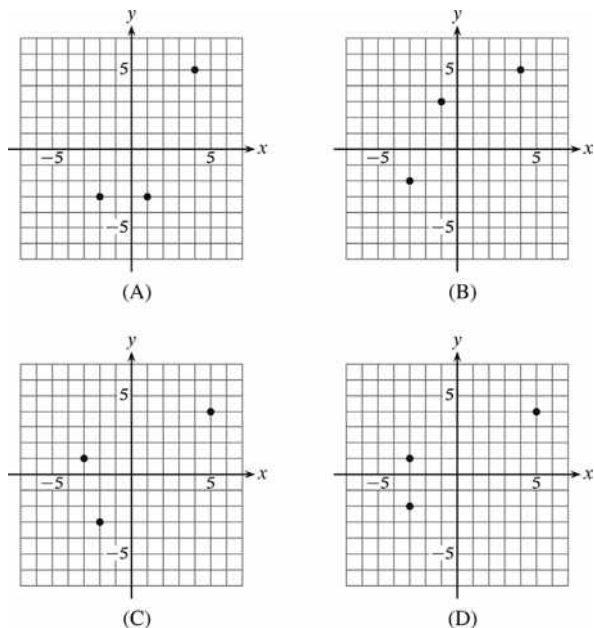
$$P(t) = 2.5t^2 + 0.5t + 12$$

models the number of diagnostic machines produced by a medical equipment manufacturer yearly, where $t = 0$ corresponds to the first year of production, 2000. Find the average rate of change in the number of machines produced yearly between 2005 and 2010.

- (A) 28 machines/year (B) 190 machines/year
 (C) 38 machines/year (D) 95 machines/year

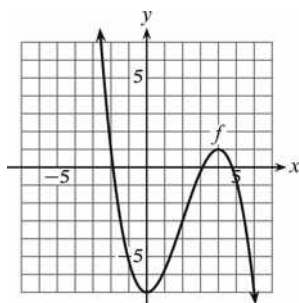
18. Plot the relation $\{(-3, 1), (-3, -2), (5, 4)\}$ in the xy -plane.

18. _____



19. Use the graph to determine the intervals on which f is increasing and which it is decreasing.

19. _____



- (A) Increasing: $(-7, 1)$
Decreasing: $(\infty, -7) (1, -\infty)$
- (B) Increasing: $(-7, \infty)$
Decreasing: $(1, -\infty)$
- (C) Increasing: $(0, 4)$
Decreasing: $[-\infty, 0) (4, \infty)$
- (D) Increasing: $(0, -\infty)$
Decreasing: $(4, \infty)$

20. The table shows the *Pizzazz-Zee* corporation’s income for the first 6 months of last year in thousands of dollars. Find its median monthly income for this period to the nearest thousand dollars.

20. _____

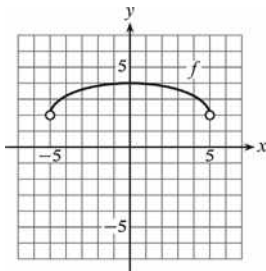
Month	Jan	Feb	Mar	Apr	May	Jun
Income	193	171	257	329	379	221

- (A) \$239,000
- (B) \$258,000
- (C) \$208,000
- (D) \$920,000

1. Let a function f be represented symbolically by $f(x) = 11 - x^2$. Find $f(-5)$. 1. _____

2. Lake Roosevelt, formed by the construction of the Grand Coulee Dam, covers 3.98×10^8 square feet and contains a total volume of 2.51×10^{10} cubic feet of water. Find the average depth of Lake Roosevelt to the nearest tenth of a foot. 2. _____

3. Use the graph of f to determine its domain. 3. _____



4. If possible, find the slope of the line passing through $(-1.7, -5.3)$ and $(0.1, -9.8)$. 4. _____

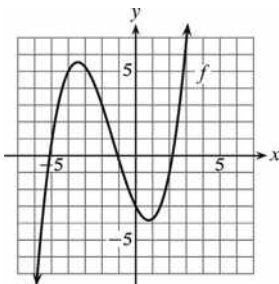
5. Determine which set of ordered pairs does **not** represent a function. 5. _____

- (A) $\{(1, 2), (2, 4), (3, 0), (4, 2)\}$ (B) $\{(1, -8), (2, 2), (3, 0), (4, 4)\}$
 (C) $\{(-1, 1), (-2, 2), (-1, 3), (0, 4)\}$ (D) $\{(1, 4), (2, 4), (3, 4), (4, 4)\}$

6. The table displays the monthly rainfall for Tampa, Florida, for the first six months in a typical year. Find the mean monthly rainfall to the nearest hundredth of an inch for these six months. 6. _____

Month	Jan	Feb	Mar	Apr	May	Jun
Rainfall (inches)	2.2	2.7	2.8	1.8	2.9	5.5

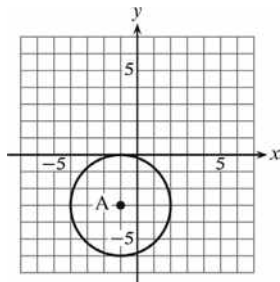
7. Use the graph of f to evaluate $f(0)$. 7. _____



8. Find the domain of $f(x) = \sqrt{x-10}$. 8. _____

9. Find the midpoint of the line segment joining the points (4.1, 1.9) and (6.1, □3.5). 9. _____

10. Find the equation of the circle. 10. _____



11. Find the distance between the points (11.2, -8.9) and (2.7, 11.5) to the nearest tenth. 11. _____

12. Find the domain and range of the relation 12. _____

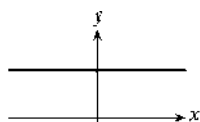
$$S = \{(-4.8, -1.2), (1.5, -2.7), (3.2, 5.4), (1.9, 5.1), (2.9, -1.7)\}.$$

13. In 2000 the population of Austin, Texas was 659,627 and in 2010 it was 790,390. Use the midpoint formula to estimate Austin’s population in 2005. 13. _____

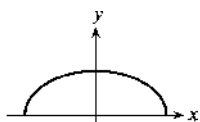
14. The data displayed in the table are linear. State the slope m of the line passing through the data points. 14. _____

X	-4	-2	0	2	4
Y	-13	-8	-3	2	7

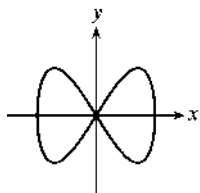
15. Which of the following is **not** the graph of a function? 15. _____



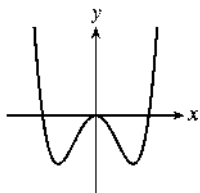
(A)



(B)



(C)



(D)

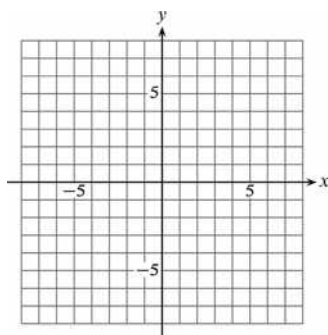
16. Write a symbolic representation (formula) of a function f that computes the number of ounces in x pounds. 16. _____

17. The function P defined by 17. _____

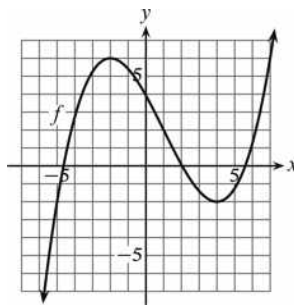
$$P(t) = 1.5t^2 + 2.5t + 42$$

models the number of diagnostic machines produced by a medical equipment manufacturer yearly, where $t = 0$ corresponds to the first year of production, 2000. Find the average rate of change in the number of machines produced yearly between 2005 and 2010.

18. Plot the relation $S = \{(-3, 7), (-1, 3), (-5, -3), (8, -1), (2, 2)\}$ in the xy -plane. 18. _____



19. Use the graph to determine the intervals on which f is increasing and on which it is decreasing. 19. _____



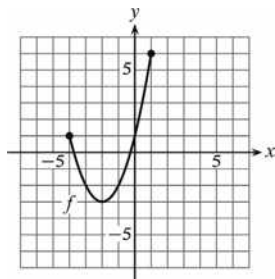
20. The table shows the *Pizzazz-Zee* corporation's income for the first 6 months of last year in thousands of dollars. Find its median monthly income for this period to the nearest thousand dollars. 20. _____

Month	Jan	Feb	Mar	Apr	May	Jun
Income	127	93	173	125	137	149

Name _____

Rockswold College Algebra & Trigonometry
Chapter 1 Test–Form D

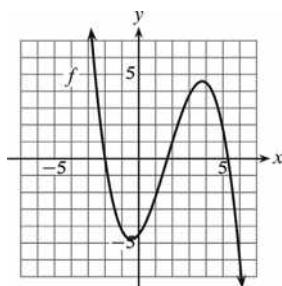
1. Let a function f be represented symbolically by $f(x) = 12 - x^2$. Find $f(-6)$. 1. _____
2. Lake Powell, formed by the construction of the Glen Canyon Dam, covers 7.78×10^8 square feet and contains a total volume of 9.84×10^{10} cubic feet of water. Find the average depth of Lake Powell to the nearest tenth of a foot. 2. _____
3. Use the graph of f to determine its domain. 3. _____



4. If possible, find the slope of the line passing through $(4.2, -1.3)$ and $(7.4, 3.5)$. 4. _____
5. Determine which set of ordered pairs does **not** represent a function. 5. _____
 - (A) $\{(1, 2), (2, 4), (3, 6), (4, 8)\}$
 - (B) $\{(8, 4), (6, 3), (4, 2), (2, 1)\}$
 - (C) $\{(-1, \pi), (-2, \pi), (-3, \pi), (-4, \pi)\}$
 - (D) $\{(\pi, 1), (\pi, 2), (\pi, 3), (\pi, 4)\}$
6. The table displays the monthly rainfall for Tampa, Florida, for the last six months in a typical year. Find the mean monthly rainfall to the nearest hundredth of an inch for these six months. 6. _____

Month	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall (inches)	6.4	7.6	6.5	2.4	1.6	2.3

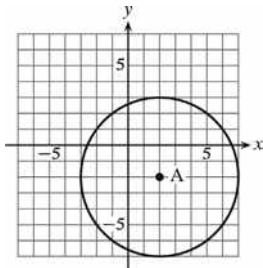
7. Use the graph of f to evaluate $f(2)$. 7. _____



8. Find the domain of $f(x) = \sqrt{8 - x}$. 8. _____
9. Find the midpoint of the line segment joining the points $(-1.3, 5.7)$ and $(4.6, 2.1)$. 9. _____

10. Find the equation of the circle.

10. _____



11. Find the distance between the points (1.81, 8.13) and (−5.11, 2.94) to the nearest hundredth.

11. _____

12. Find the domain and range of the relation

12. _____

$$S = \{(4.8, 2.1), (5.2, 1.9), (-1.7, -4.3), (2.2, -3.9), (-4.9, -1.1)\}.$$

13. In 2000 the population of Portland, Oregon was 529,209 and in 2010 it was 583,776. Use the midpoint formula to estimate Portland’s population in 2005.

13. _____

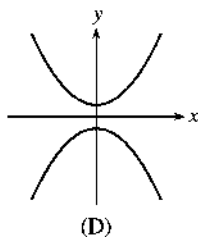
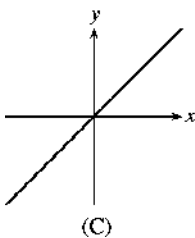
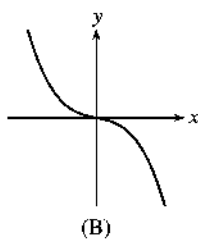
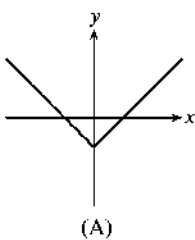
14. The data displayed in the table are linear. State the slope m of the line passing through the data points.

14. _____

X	-9	-5	-1	3	7
Y	3	2	1	0	-1

15. Which of the following is **not** the graph of a function?

15. _____



16. Write a symbolic representation (formula) of a function f that computes the number of pounds in x ounces.

16. _____

17. The function P defined by

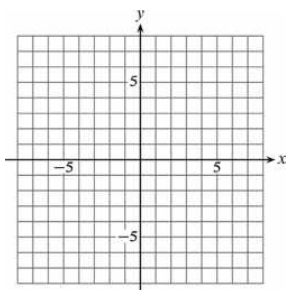
17. _____

$$P(t) = 0.5t^2 + 3.5t + 25$$

models the number of diagnostic machines produced by a medical equipment manufacturer yearly, where $t = 0$ corresponds to the first year of production, 2000. Find the average rate of change in the number of machines produced per year between 2005 and 2010.

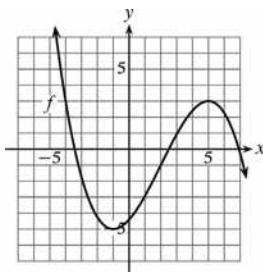
18. Plot the relation $S = \{(-4, 1), (2.5), (-1, 1), (3, 6), (4, -1)\}$ in the xy -plane.

18. _____



19. Use the graph to determine the intervals on which f is increasing and on which it is decreasing.

19. _____

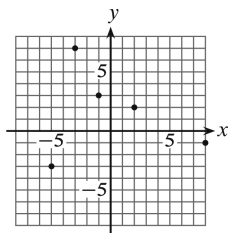
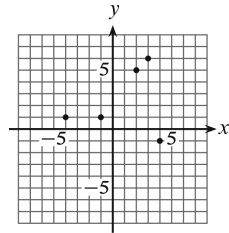


20. The table shows the *Pizzazz-Zee* corporation’s income for the first 6 months of last year in thousands of dollars. Find its median monthly income for this period to the nearest thousand dollars.

20. _____

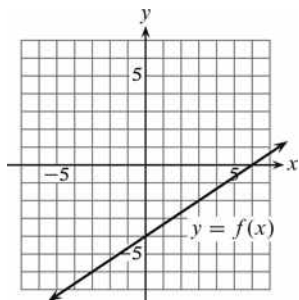
Month	Jan	Feb	Mar	Apr	May	Jun
Income	231	113	387	217	285	309

Test 1 Answers

Form A	Form B	Form C	Form D
1. C	1. D	1. -14	1. -24
2. C	2. B	2. 63.1 feet	2. 126.5 feet
3. C	3. A	3. $(-5, 5)$	3. $[-4, 1]$
4. A	4. A	4. -2.5	4. 1.5
5. D	5. C	5. C	5. D
6. B	6. D	6. 2.98 in	6. 4.47 in.
7. C	7. A	7. -3	7. 1
8. B	8. B	8. $[10, \infty)$	8. $(-\infty, 8]$
9. A	9. D	9. $(5.1, -0.8)$	9. $(1.65, 3.9)$
10. B	10. A	10. $(x + 1)^2 + (y + 3)^2 = 9$	10. $(x - 2)^2 + (y + 2)^2 = 25$
11. B	11. D	11. 22.1	11. 8.65
12. D	12. B	12. $D = \{-4.8, 1.5, 3.2, 1.9, 2.9\}$ $R = \{-1.2, -2.7, 5.4, 5.1, -1.7\}$	12. $D = \{4.8, 5.2, -1.7, 2.2, -4.9\}$ $R = \{2.1, 1.9, -4.3, -3.9, -1.1\}$
13. D	13. A	13. 725,009	13. 556,493
14. C	14. A	14. $m = \frac{5}{2}$	14. $m = -\frac{1}{4}$
15. A	15. A	15. C	15. D
16. A	16. C	16. $f(x) = 16x$	16. $f(x) = \frac{x}{16}$
17. C	17. C	17. 25 machines/year	17. 11 machines/year
18. D	18. D	18. 	18. 
19. C	19. C	19. Increasing: $(-\infty, -2)$ $(4, \infty)$ Decreasing: $(-2, 4)$	19. Increasing: $(-1, 5)$ Decreasing: $(-\infty, -1)$ $(5, \infty)$
20. B	20. A	20. \$132,000	20. \$258,000

1. Write a formula for f .

1. _____



(A) $f(x) = \frac{2}{3}x - 4$

(B) $f(x) = -\frac{3}{2}x - 4$

(C) $f(x) = \frac{3}{2}x - 4$

(D) $f(x) = -\frac{2}{3}x - 4$

2. To receive an A in the course a student must earn at least 90% of the total points possible on a series of exams. There are three 100-point unit exams and a 200-point final exam. Mark's scores on the first three exams are 85, 91, and 88. What is the lowest score he can earn on the final exam to earn an A in the course?

2. _____

(A) 93

(B) 186

(C) He cannot earn enough points.

(D) 96

3. Solve the linear equation $6 + 6(12 - x) = 4(x - 1) - 1$.

3. _____

(A) 9.3125

(B) -41.5

(C) -36.5

(D) 8.3

4. Find the slope-intercept form of the equation of the line parallel to $y = 4x - 1$, passing through $(5, -3)$.

4. _____

(A) $y = -\frac{1}{4}x - 3$

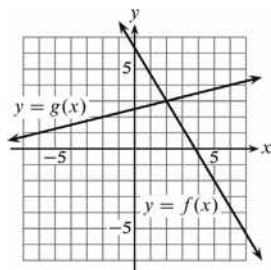
(B) $y = 4x - 3$

(C) $y = -\frac{1}{4}x - \frac{7}{4}$

(D) $y = 4x - 23$

5. The graphs of two linear functions f and g are shown in the figure. Solve the inequality $g(x) > f(x)$.

5. _____



(A) $x < 2$

(B) $x > 2$

(C) $x > 3$

(D) $x < 3$

6. Solve the linear inequality $3x + 9 \leq 5x - 2$. Write the solution set in interval notation. 6. _____

- (A) $\left[-\frac{11}{2}, \infty\right)$ (B) $\left(-\infty, -\frac{11}{2}\right]$
 (C) $\left(-\infty, \frac{11}{2}\right]$ (D) $\left[\frac{11}{2}, \infty\right)$

7. Solve the absolute value inequality $|7 - 3x| \geq 5$. 7. _____

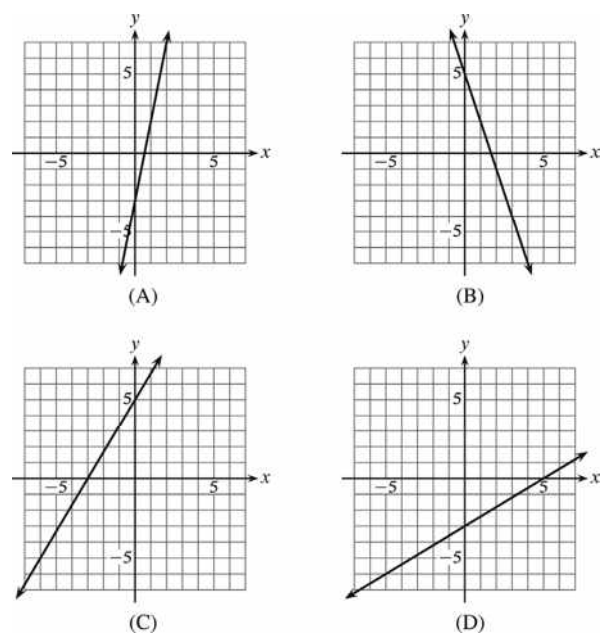
- (A) $\frac{2}{3} \leq x \leq 4$ (B) $x \leq \frac{2}{3}$ or $x \geq 4$
 (C) $-4 \leq x \leq -\frac{2}{3}$ (D) $x \leq -4$ or $x \geq -\frac{2}{3}$

8. Find $f(x) = ax + b$ so that f models the data exactly. 8. _____

x	-6	-2	1	5	9
$f(x)$	-0.64	-0.48	-0.36	-0.20	-0.04

- (A) $f(x) = 6.06x + 0.36$ (B) $f(x) = 0.165x - 0.625$
 (C) $f(x) = 0.04x - 0.4$ (D) $f(x) = 25x - 124.8$

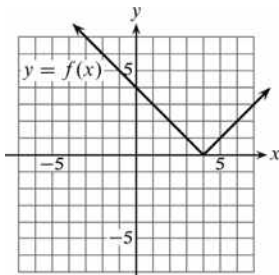
9. Graph the linear function $f(x) = \frac{3}{5}x - 3$. 9. _____



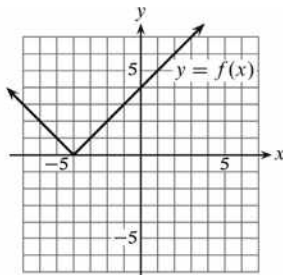
10. The Old Campaign Warehouse can prepare a political mailing in 8 hours if working alone. It would take the Enthusiastic Volunteer, working on her first campaign, 12 hours. How long will it take them to prepare the mailing if they work together? 10. _____
- (A) 20 hours (B) 4.8 hours
(C) 10 hours (D) 2 hours

11. Solve the absolute value equation $|5x + 2| - 2 = 5$. 11. _____
- (A) No solutions (B) $1, -\frac{9}{5}$
(C) $-1, 1$ (D) $1, -\frac{5}{9}$

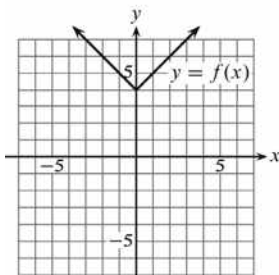
12. Sketch the graph of the function $f(x) = |x| - 4$ 12. _____



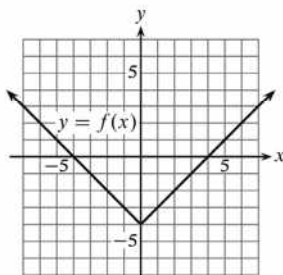
(A)



(B)



(C)



(D)

13. The inequality $|78 - T| \leq 18$ describes the range of monthly average temperatures T in degrees Fahrenheit for Austin, Texas. Find the high and low monthly average temperatures for Austin. 13. _____
- (A) High = 96°F ; Low = 0°F (B) High = 60°F ; Low = 0°F
(C) High = 96°F ; Low = 60°F (D) High = 78°F ; Low = 18°F

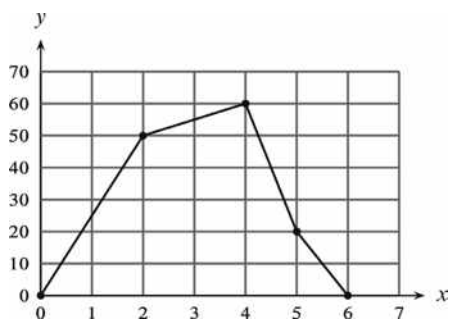
14. The table lists data that are exactly linear. Predict the value of y when $x = -2.1$.

14. _____

x	-3	-2	-1	0	1
Y	8.8	5.6	2.4	-0.8	-4

- (A) $y = 7.52$ (B) $y = -5.92$
 (C) $y = -7.52$ (D) $y = 5.92$
15. The graph depicts the distance y that a person driving a car on a straight road is from home after x hours. Between what hours was the person driving slowest?

15. _____



- (A) 0 and 2 (B) 2 and 4
 (C) 4 and 5 (D) 5 and 6
16. Determine how much pure water should be mixed with 18 liters of a 15% solution of hydrochloric acid to make a 12% solution of hydrochloric acid.
- (A) 27 liters (B) 0.8 liters
 (C) 4.5 liters (D) 22.5 liters
17. A driver of a car is initially 315 miles from home, traveling away from home on a straight freeway at 60 miles per hour. Write a formula for a linear function f that models the distance between the driver and home after x hours.
- (A) $f(x) = 315 + 60x$ (B) $f(x) = 60 + 315x$
 (C) $f(x) = 315 - 60x$ (D) $f(x) = 60 - 315x$

17. _____

18. Find an equation of the line parallel to the x -axis, passing through $(4, -3)$.

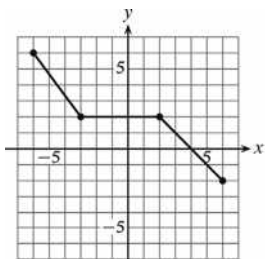
18. _____

- (A) $x = 4$ (B) $x = -3$
 (C) $y = 4$ (D) $y = -3$

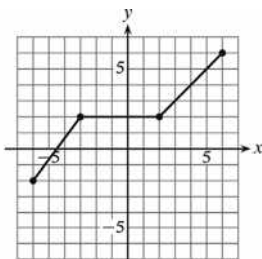
19. Sketch the graph of the function

19. _____

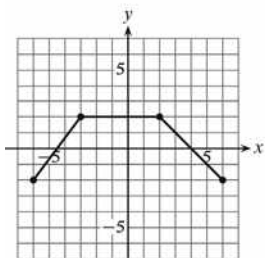
$$f(x) = \begin{cases} \frac{4}{3}x + 6 & \text{if } -6 \leq x < -3 \\ 2 & \text{if } -3 \leq x < 2 \\ -x + 4 & \text{if } 2 \leq x \leq 6. \end{cases}$$



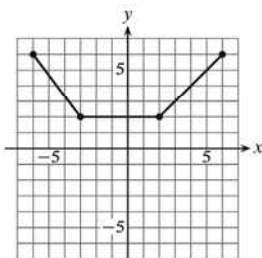
(A)



(B)



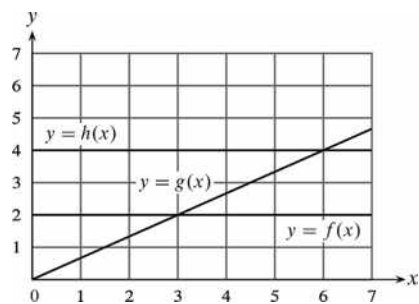
(C)



(D)

20. The graphs of three linear functions f , g , and h with domains $[0, 7]$ are shown in the figure. Solve the inequality $f(x) < g(x) < h(x)$.

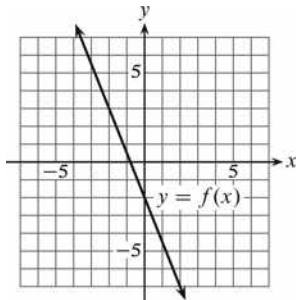
20. _____



- (A) $2 < x < 4$
- (B) $2 < x < 3$
- (C) $3 < x < 6$
- (D) $0 < x < 3$

1. Write a formula for f .

1. _____



- (A) $f(x) = -\frac{5}{2}x - 2$
- (B) $f(x) = \frac{2}{5}x - 2$
- (C) $f(x) = -\frac{2}{5}x - 2$
- (D) $f(x) = \frac{5}{2}x - 2$

2. To receive an A in the course a student must earn at least 90% of the total points possible on a series of exams. There are three 100-point unit exams and a 200-point final exam. Mark’s scores on the first three exams are 78, 96, and 87. What is the lowest score he can earn on the final exam to earn an A in the course?

2. _____

- (A) He cannot earn enough points
- (B) 154
- (C) 189
- (D) 94

3. Solve the linear equation $5x - (3 + x) = x + 5(x - 4)$.

3. _____

- (A) No solutions
- (B) -2.3
- (C) 8.5
- (D) -8.5

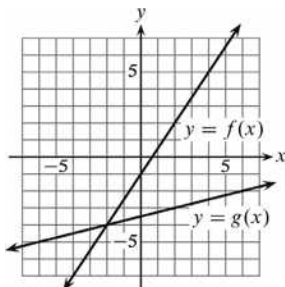
4. Find the slope-intercept form of the equation of the line parallel to $y = -2x + 3$, passing through $(3, -7)$.

4. _____

- (A) $y = -\frac{1}{2}x - 7$
- (B) $y = \frac{1}{2}x - \frac{17}{2}$
- (C) $y = -2x - 1$
- (D) $y = 2x - 7$

5. The graphs of two linear functions f and g are shown in the figure. Solve the inequality $f(x) > g(x)$.

5. _____



- (A) $x < -4$
- (B) $x > -4$
- (C) $x > -2$
- (D) $x < -2$

6. Solve the linear inequality $2x - 7 \geq 9x + 2$. Write the solution set in interval notation.

6. _____

(A) $\left[-\frac{9}{7}, \infty\right)$

(B) $\left(-\infty, -\frac{9}{7}\right]$

(C) $\left(-\infty, -\frac{9}{7}\right]$

(D) $\left[\frac{9}{7}, \infty\right)$

7. Solve the absolute value inequality $|7x - 3| \geq 4$.

7. _____

(A) $x \leq -\frac{1}{7}$ or $x \geq 1$

(B) $-\frac{1}{7} \leq x \leq 1$

(C) $-1 \leq x \leq \frac{1}{7}$

(D) $x \leq -1$ or $x \geq \frac{1}{7}$

8. Find $f(x) = ax + b$ so that f models the data exactly.

8. _____

x	-6	-2	1	5	9
$f(x)$	2.86	1.58	0.62	-0.66	-1.94

(A) $f(x) = -2.2x + 1.58$

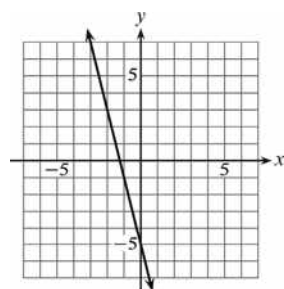
(B) $f(x) = -3.125x + 2.505$

(C) $f(x) = -2.2x - 2.82$

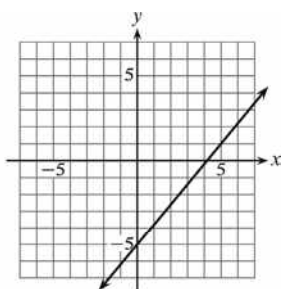
(D) $f(x) = -0.32x + 0.94$

9. Graph the linear function $f(x) = 4x - 5$.

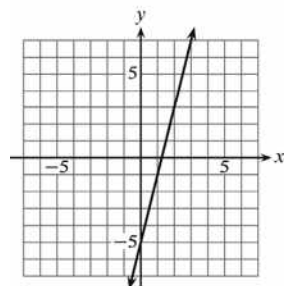
9. _____



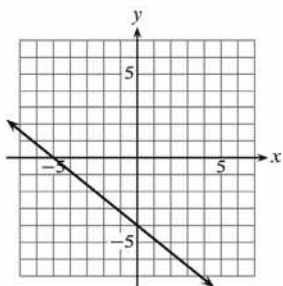
(A)



(B)



(C)



(D)

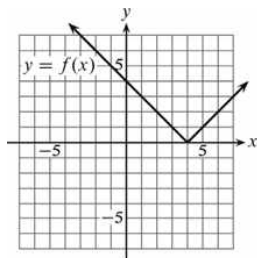
10. An upgraded version of a computer chip can process a standard data set in $6 \mu \text{ sec}$. The earlier version of the chip takes $9 \mu \text{ sec}$ to process the same data set. How long would it take both chips working together to process the data set? 10. _____

- (A) $15 \mu \text{ sec}$ (B) $3 \mu \text{ sec}$
 (C) $7.5 \mu \text{ sec}$ (D) $3.6 \mu \text{ sec}$

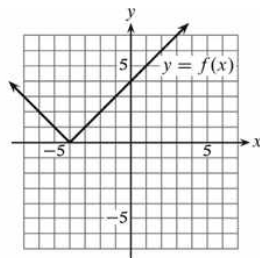
11. Solve the absolute value equation $|3x - 5| + 2 = 9$. 11. _____

- (A) No solutions (B) $-4, 4$
 (C) $\frac{2}{3}, 4$ (D) $-\frac{2}{3}, 4$

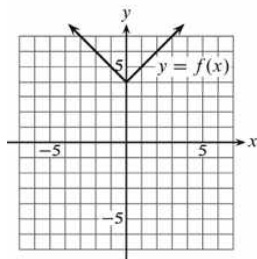
12. Sketch the graph of the function $f(x) = |x - 4|$. 12. _____



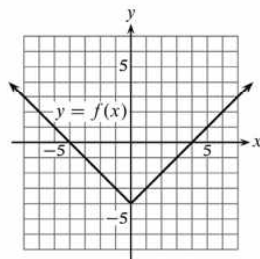
(A)



(B)



(C)



(D)

13. The inequality $|49 - T| \leq 22$ describes the range of monthly average temperatures T in degrees Fahrenheit for Holland, Michigan. Find the high and low monthly average temperatures for Holland. 13. _____

- (A) High = 71°F ; Low = 0°F (B) High = 71°F ; Low = 27°F
 (C) High = 27°F ; Low = 60°F (D) High = 49°F ; Low = 22°F

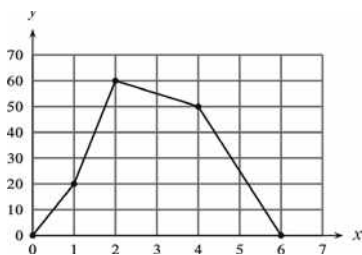
14. The table lists data that are exactly linear. Predict the value of y when $x = -1.7$. 14. _____

X	-3	-2	-1	0	1
Y	0.4	1.3	2.2	3.1	4

- (A) $y = 1.57$ (B) $y = 4.63$
 (C) $y = -4.83$ (D) $y = -1.57$

15. The graph depicts the distance y that a person driving a car on a straight road is from home after x hours. Between what hours was the person driving fastest?

15. _____



- (A) 0 and 1
- (B) 1 and 2
- (C) 2 and 4
- (D) 4 and 6

16. Determine how much pure water should be mixed with 12 liters of a 18% solution of sodium chloride to make a 10% solution of sodium chloride.

16. _____

- (A) 0.56 liters
- (B) 9.6 liters
- (C) 28 liters
- (D) 21.6 liters

17. A driver of a car is initially 245 miles from home, traveling away from home on a straight freeway at 70 miles per hour. Write a formula for a linear function f that models the distance between the driver and home after x hours.

17. _____

- (A) $f(x) = 245 + 70x$
- (B) $f(x) = 60 + 245x$
- (C) $f(x) = 245 - 70x$
- (D) $f(x) = 70 - 245x$

18. Find an equation of the line parallel to the y -axis, passing through $(4, -3)$.

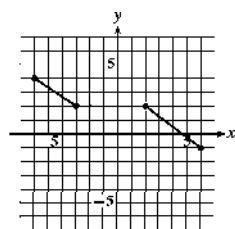
18. _____

- (A) $x = 4$
- (B) $x = -3$
- (C) $y = 4$
- (D) $y = -3$

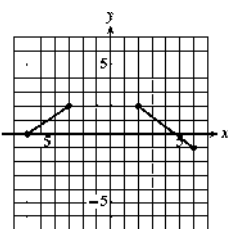
19. Sketch the graph of the function

19. _____

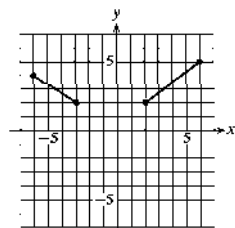
$$f(x) = \begin{cases} -\frac{2}{3}x & \text{if } -6 \leq x < -3 \\ 2 & \text{if } -3 \leq x < 2 \\ -\frac{3}{4}x + \frac{7}{2} & \text{if } 2 \leq x \leq 6. \end{cases}$$



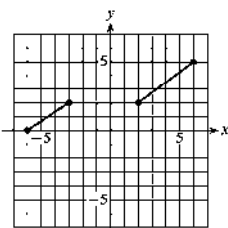
(A)



(B)



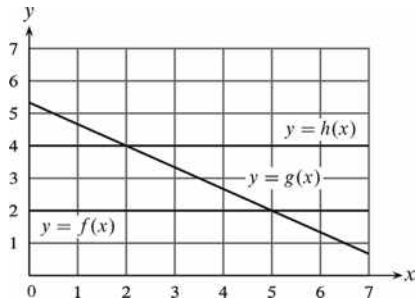
(C)



(D)

20. The graphs of three linear functions f , g , and h with domains $[0, 7]$ are shown in the figure. Solve the inequality $f(x) < g(x) < h(x)$.

20. _____

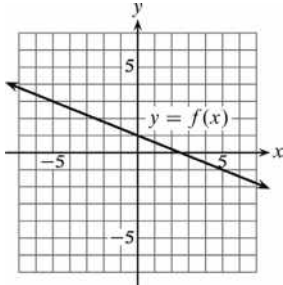


- (A) $2 < x < 5$
(B) $2 < x < 6$
(C) $0 < x < 5$
(D) $0 < x < 4$

Name _____

1. Write a formula for f .

1. _____



2. To receive an A in a course a student must earn at least 90% of the total points possible on a series of exams. There are three 100-point unit exams and a 200-point final exam. Mark's scores on the first three exams are 65, 91, and 89. What is the lowest score he can earn on the final exam to earn an A in the course?

2. _____

3. Solve the linear equation $7 - 8(x - 4) = 3x - 7$.

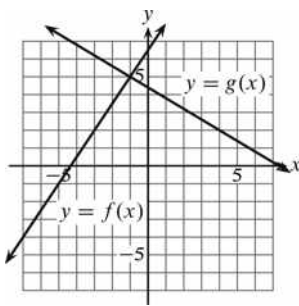
3. _____

4. Find the slope-intercept form of the equation of the line parallel to $y = \frac{1}{3}x + 4$, passing through $(6, -1)$.

4. _____

5. The graphs of two linear functions f and g are shown in the figure. Solve the inequality $f(x) < g(x)$.

5. _____



6. Solve the linear inequality $5x + 7 > 8x + 2$. Write the solution set in interval notation.

6. _____

7. Solve the absolute value inequality $|5x - 2| < 2$.

7. _____

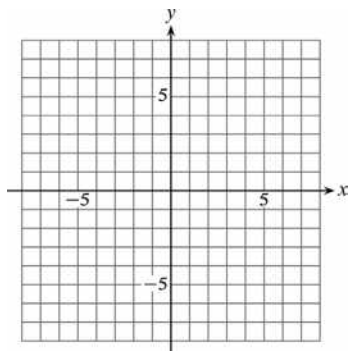
8. Find $f(x) = ax + b$ so that f models the data exactly.

8. _____

x	-6	-2	1	5	9
$f(x)$	1.50	0.78	0.24	-0.48	-1.20

9. Graph the linear function $f(x) = 7 - 4x$.

9. _____



10. An upgraded version of a computer chip can process a standard data set in 12μ sec. The earlier version of the chip takes 18μ sec to process the same data set. How long would it take both chips working together to process the data set?

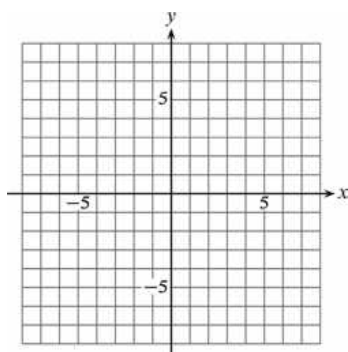
10. _____

11. Solve the absolute value equation $|7x - 3| - 7 = 11$.

11. _____

12. Sketch the graph of the function $f(x) = |x + 5|$.

12. _____



13. The inequality $|48 - T| \leq 28$ describes the range of monthly average temperatures T in degrees Fahrenheit for Des Moines, Iowa. Find the high and low monthly average temperatures for Des Moines.

13. _____

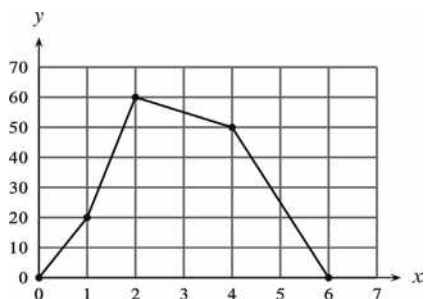
14. The table lists data that are exactly linear. Predict the value of y when $x = -2.7$.

14. _____

x	-3	-2	-1	0	1
y	-12.7	-11.5	-10.3	-9.1	-7.9

15. The graph depicts the distance y that a person driving a car on a straight road is from home after x hours. Between what hours was the person driving slowest?

15. _____



16. Determine how much pure water should be mixed with 25 liters of a 70% solution of naphthalene to make a 20% solution of naphthalene.

16. _____

17. A driver of a car is initially 455 miles from home, traveling away from home on a straight freeway at 65 miles per hour. Write a formula for a linear function f that models the distance between the driver and home after x hours.

17. _____

18. Find an equation of the line parallel to the y -axis, passing through $(-2, 7)$.

18. _____

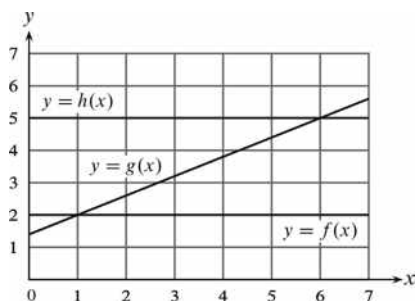
19. Sketch the graph of the function

19. _____

$$f(x) = \begin{cases} \frac{7}{3}x + 10 & \text{if } -6 \leq x < -3 \\ 3 & \text{if } -3 \leq x < 2 \\ \frac{1}{4}x + \frac{5}{2} & \text{if } 2 \leq x \leq 6. \end{cases}$$

20. The graphs of three linear functions f , g , and h with domains $[0, 7]$ are shown in the figure. Solve the inequality $f(x) < g(x) < h(x)$.

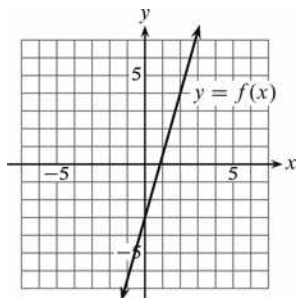
20. _____



Name _____

1. Write a formula for f .

1. _____



2. To receive an A in the course a student must earn 92% of the total points possible on a series of exams. There are three 100-point unit exams and a 200-point final exam. Mark's scores on the first three exams are 90, 94, and 86. What is the lowest score he can earn on the final exam to earn an A in the course?

2. _____

3. Solve the linear equation $8 - 3(3 - 2x) = x - 4(x - 3)$.

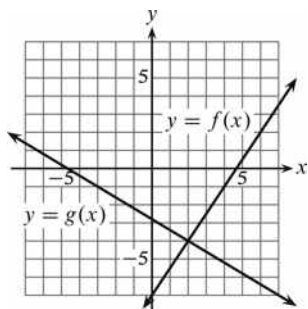
3. _____

4. Find the slope-intercept form of the equation of the line parallel to $y = -3x - 1$, passing through $(1, 9)$.

4. _____

5. The graphs of two linear functions f and g are shown in the figure. Solve the inequality $f(x) < g(x)$.

5. _____



6. Solve the linear inequality $x - 9 > 8x - 6$. Write the solution set in interval notation.

6. _____

7. Solve the absolute value inequality $|4x + 7| < 3$.

7. _____

8. Find $f(x) = ax + b$ so that f models the data exactly.

8. _____

x	-6	-2	1	5	9
$f(x)$	8.90	3.62	-0.34	-5.62	-10.9

