

Print Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. Write your answer in the blank provided and record your answer on the scantron answer sheet. (You will not be getting the scantron answer sheet back.) If a question appears to not have instructions, the instructions for the previous question apply. Most questions have four possible answers but some do not appear on the same page. Good luck and have fun!

For the pair of functions, find the indicated domain.

1) $f(x) = \frac{10}{x+1}$, $g(x) = x + 8$

1) _____

Find the domain of $f \circ g$.

A) $(-\infty, \infty)$

B) $(-\infty, -1) \cup (-1, \infty)$

C) $(-\infty, -9] \cup [-9, \infty)$

D) $(-\infty, -9) \cup (-9, \infty)$

Find $f(x)$ and $g(x)$ such that $h(x) = (f \circ g)(x)$.

2) $h(x) = (-2x + 2)^6$

2) _____

A) $f(x) = x^6, g(x) = -2x + 2$

B) $f(x) = -2x + 2, g(x) = x^6$

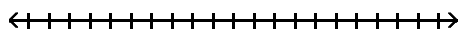
C) $f(x) = (-2x)^6, g(x) = 2$

D) $f(x) = -2x^6, g(x) = x + 2$

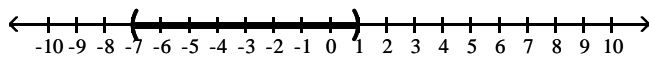
Solve and write interval notation for the solution set. Then graph the solution set.

3) $-1 \leq \frac{1}{2}(x + 1) \leq 3$

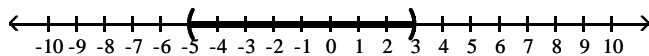
3) _____



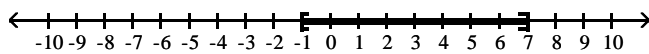
A) $(-7, 1)$



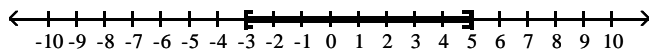
B) $[-5, 3]$



C) $[-1, 7]$



D) $[-3, 5]$



For the pair of functions, find the indicated sum, difference, product, or quotient.

4) $f(x) = 2x - 7$, $g(x) = 4x + 1$

Find $(fg)(x)$.

4) _____

A) $8x^2 - 7$

B) $6x^2 - 26x - 6$

C) $8x^2 - 26x - 7$

D) $8x^2 - 27x - 7$

Find an equation of variation for the given situation.

5) y varies directly as z , and $y = 21$ when $z = 105$.

5) _____

A) $y = -2z$

B) $y = -\frac{1}{2}z$

C) $y = 5z$

D) $y = \frac{1}{5}z$

Find the slope and the y-intercept of the line with the given equation.

6) $f(x) = 9.1 - x$

6) _____

A) 9.1; (0, -1)

B) 1; (0, 9.1)

C) -1; (9.1, 0)

D) -1; (0, 9.1)

Answer the question.

7) The points $(-6, 5)$ and $(2, 5)$ are the points at which a particular diameter of a circle intersects the circle. What are the coordinates of the center of the circle?

7) _____

A) $(-1, 6)$

B) $(-2, 5)$

C) $(-2, 6)$

D) $(-1, 5)$

8) How can the graph of $f(x) = -5\sqrt{x} + 5$ be obtained from the graph of $y = \sqrt{x}$?

8) _____

A) Stretch it vertically by a factor of 5. Reflect it across the y-axis. Shift it 5 units horizontally to the left.

B) Stretch it vertically by a factor of 5. Reflect it across the x-axis. Shift it 5 units horizontally to the right.

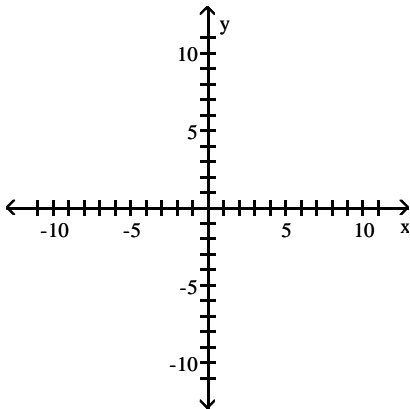
C) Shrink it vertically by a factor of $\frac{1}{5}$. Reflect it across the x-axis. Shift it vertically 5 units downward.

D) Stretch it vertically by a factor of 5. Reflect it across the x-axis. Shift it vertically 5 units upward.

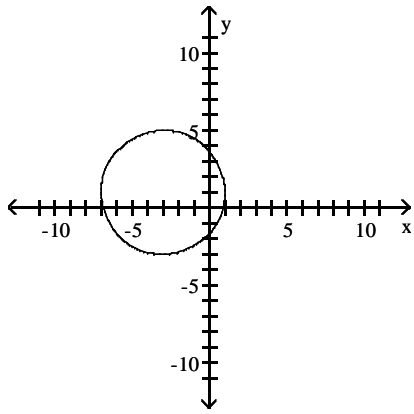
Graph the circle using the given equation. Choose the multiple-choice answer from those given.

9) $(x - 3)^2 + (y - 1)^2 = 16$

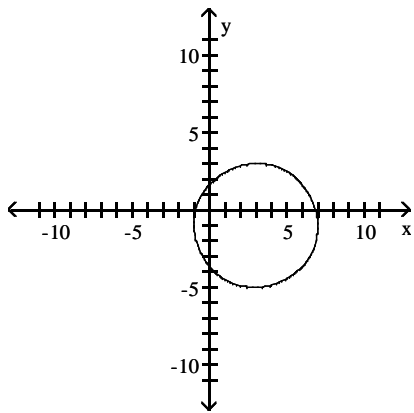
9) _____



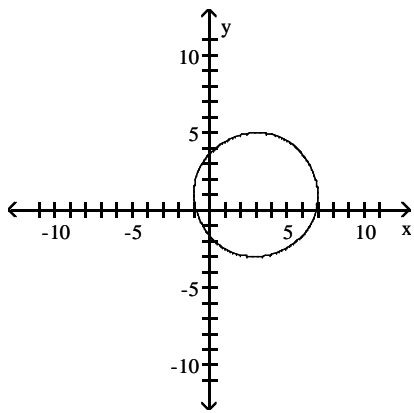
A)



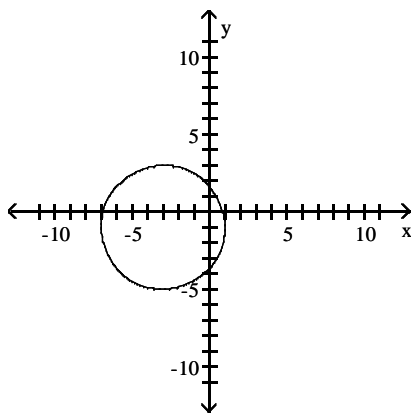
B)



C)



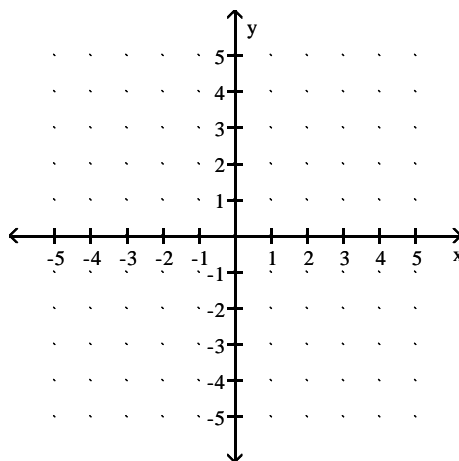
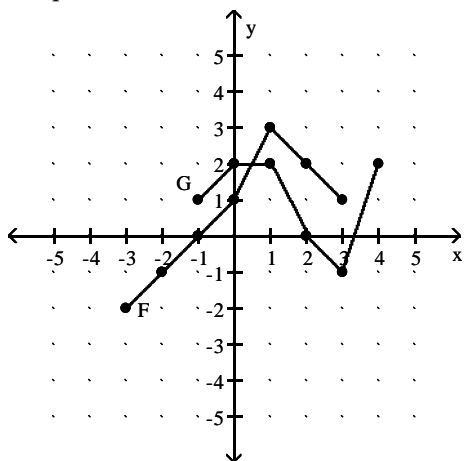
D)



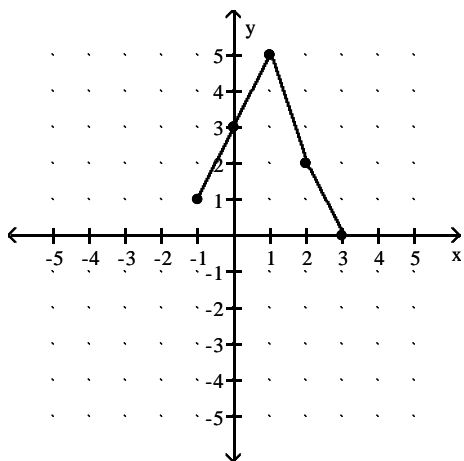
Consider the functions F and G as shown in the graph. Choose the multiple-choice answer from those given.

10) Graph $F + G$.

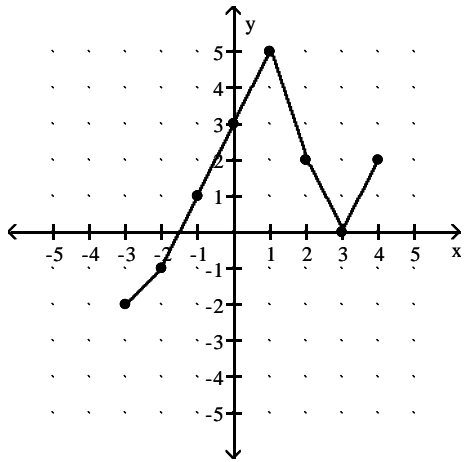
10) _____



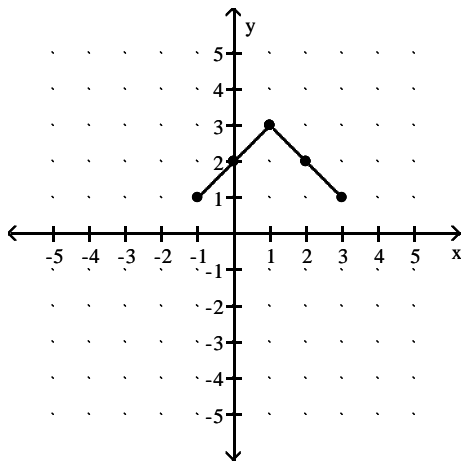
A)



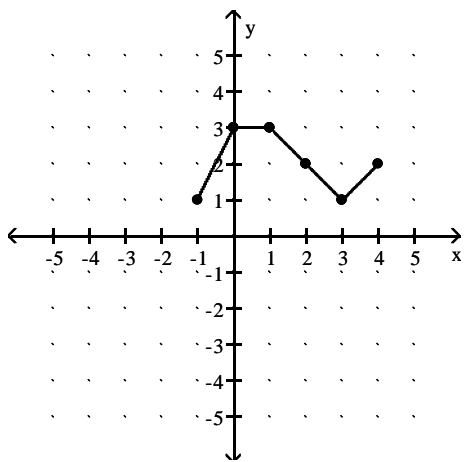
B)



C)



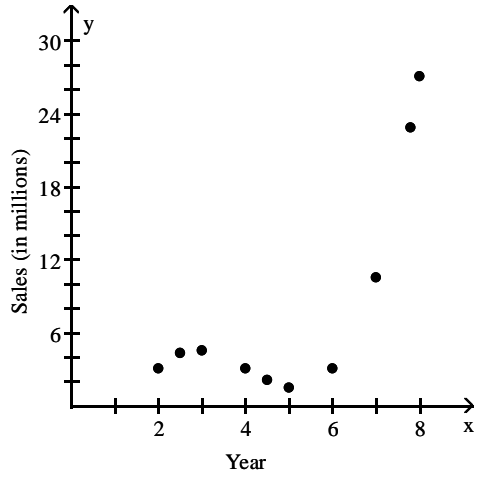
D)



Determine whether a linear model might fit the data.

11)

11) _____



A) Yes

B) No

Solve the equation.

12) $-6y + 3 = -7 - 6y$

12) _____

A) all real numbers

B) 7

C) 0

D) no solution

Solve the problem.

13) The gravitational attraction A between two masses varies inversely as the square of the distance between them. The force of attraction is 9 lb when the masses are 2 ft apart, what is the attraction when the masses are 6 ft apart?

13) _____

A) 2 lb

B) 4 lb

C) 3 lb

D) 1 lb

Find the domain of the function.

14) $f(x) = |4x - 11|$

14) _____

A) all real numbers, or $(-\infty, \infty)$

B) $\left\{x \mid x < \frac{11}{4}\right\}$, or $\left(-\infty, \frac{11}{4}\right)$

C) $\left\{x \mid x > \frac{11}{4}\right\}$, or $\left(\frac{11}{4}, \infty\right)$

D) $\left\{x \mid x \neq \frac{11}{4}\right\}$, or $\left(-\infty, \frac{11}{4}\right) \cup \left(\frac{11}{4}, \infty\right)$

Determine whether the pair of lines is parallel, perpendicular, or neither.

$$15) \begin{aligned} 3x - 9y &= 10 \\ 18x + 12y &= 10 \end{aligned}$$

15) _____

A) Parallel

B) Perpendicular

C) Neither

For the pair of functions, find the indicated composition.

$$16) f(x) = \frac{4}{x}, \quad g(x) = 7x^3$$

16) _____

Find $(g \circ f)(x)$.

A) $\frac{7x^3}{64}$

B) $\frac{4}{7x^3}$

C) $\frac{448}{x^3}$

D) $\frac{7x^3}{4}$

Solve the problem using your calculator.

17) The paired data below consist of the costs of advertising (in thousands of dollars) and the number of products sold (in thousands). Use a graphing calculator to model the data with a linear function that predicts the number of products sold as a function of the cost of advertising.

17) _____

Cost		9	2	3	4	2	5	9	10
Number		85	52	55	68	67	86	83	73

A) $y = 26.4 + 1.42x$

B) $y = 55.8 - 2.79x$

C) $y = -26.4 - 1.42x$

D) $y = 55.8 + 2.79x$

Solve.

- 18) From a 26-inch by 26-inch piece of metal, squares are cut out of the four corners so that the sides can then be folded up to make a box. Let x represent the length of the sides of the squares, in inches, that are cut out. Express the volume of the box as a function of x . 18) _____

A) $V(x) = 4x^3 - 104x^2$

B) $V(x) = 4x^3 - 104x^2 + 676x$

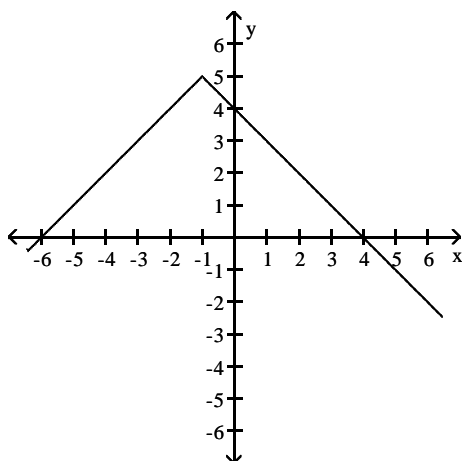
C) $V(x) = 2x^3 - 78x^2$

D) $V(x) = 2x^3 - 78x^2 + 26x$

Find the domain and range of the function represented in the graph. [Both ends of the graph extend forever. They did not draw the arrows but they should have.]

19)

19) _____



- A) Domain: $(-\infty, \infty)$; Range: $(-\infty, \infty)$
- B) Domain: $(-\infty, -1)$ or $(-1, \infty)$; Range: $(-\infty, 5)$ or $(5, \infty)$
- C) Domain: $(-\infty, \infty)$; Range: $(-\infty, 5]$
- D) Domain: $(-\infty, -1]$; Range: $(-\infty, 5]$

Determine algebraically whether the function is even, odd, or neither even nor odd.

20) $f(x) = 2x^5 + 2x^3$

20) _____

A) Even

B) Odd

C) Neither

Answer Key

Testname: 131_REVASS_CH1_2

- 1) D
Objective: (2.3) Find Domain of Composition of Functions
- 2) A
Objective: (2.3) Find Component Functions Given Composition
- 3) D
Objective: (1.6) Solve Compound Inequality with Conjunction
- 4) C
Objective: (2.2) Find Sum/Difference/Product/Quotient of Functions
- 5) D
Objective: (2.6) Find Equation: Direct Variation ($y = kx$)
- 6) D
Objective: (1.3) Find Slope and y-Intercept of Equation
- 7) B
Objective: (1.1) Solve Apps: Use Distance/Midpoint Formulas
- 8) D
Objective: (2.5) Describe Transformation I
- 9) C
Objective: (1.1) Graph Circle
- 10) A
Objective: (2.2) Combine Functions from Graphs
- 11) B
Objective: (1.4) Determine Whether Linear Model Fits Data (Y/N)
- 12) D
Objective: (1.5) Solve Linear Equation II
- 13) D
Objective: (2.6) Solve Apps: Combined Variation I
- 14) A
Objective: (1.2) Determine Domain of Function
- 15) C
Objective: (1.4) Determine if Lines are Parallel/Perpendicular/Neither
- 16) C
Objective: (2.3) Find Composition of Functions
- 17) D
Objective: (1.4) Tech: Solve Apps: Linear Regression
- 18) B
Objective: (2.1) Solve Apps: Express Quantity in Function Notation
- 19) C
Objective: (1.2) Find Domain and Range Given Graph
- 20) B
Objective: (2.4) Determine Whether Function is Even/Odd Algebraically