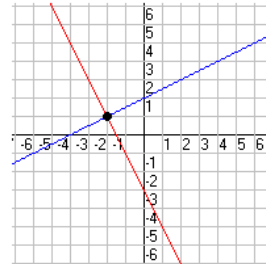
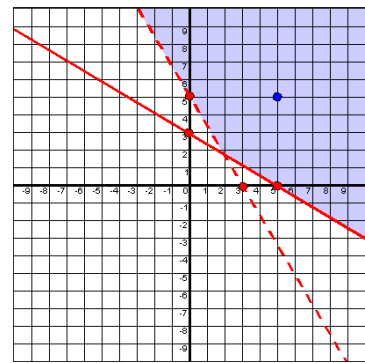


1. Which of the following points represents a solution to the equation $y = -2x + 1$?
 a. (-1, 1) b. (-2, -4) c. (1, -3) d. (2, -3)

2. What is the solution of the systems of equations graphed?
 a. (-2, 1) b. (1, -2) c. (1, 2) d. (2, -1)



3. Find the system of inequalities of this graph.
 a. $y < \frac{3}{5}x + 3$, $y \geq \frac{5}{3}x + 5$ c. $y \geq \frac{3}{5}x + 3$, $y > \frac{5}{3}x + 5$
 b. $y \leq \frac{3}{5}x + 3$, $y < \frac{5}{3}x + 5$ d. $y \leq \frac{3}{5}x + 3$, $y \geq \frac{5}{3}x + 5$

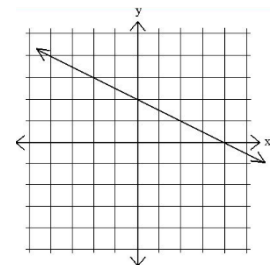


4. Which of the following points would be a solution for this graph?
 a. (-4, 0) b. (0, 4) c. (4, 0) d. (4, 4)

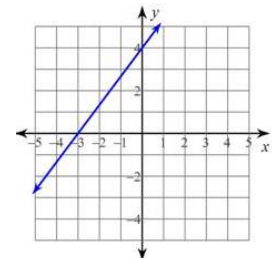
5. Which of the following sets of data represents a function?
 a. {(-3, 2), (2, -3), (-3, 3)} c. {(-1, 2), (4, 2), (7, 2)}
 b. {(-3, 2), (4, 3), (4, 1)} d. {(4, 2), (-1, 2), (-1, 1)}

6. Write the first four terms for the sequence of this function: $a_n = -3 + 2(n - 1)$
 a. {2, -1, -4, -7} b. {2, 5, 8, 11} c. {-3, -1, 1, 3} d. {-1, 2, 5, 8}

7. Using the slope and the y-intercept, find the function of this graph:
 a. $f(x) = -2x + 2$ b. $f(x) = 1/2x + 2$ c. $f(x) = 2x - 1/2$ d. $f(x) = -1/2x + 2$



8. Using the x-intercept and the y-intercept, find the equation of this graph:
 a. $-4x + 3y = 12$ b. $-3x + 4y = -12$ c. $x - y = 12$ d. $-2x + y = 12$



9. You have 4 dollars, then you earn 8 dollars on day 1 of a job, 16 dollars on day 2, 32 dollars on day 3, and so on. If this continues in the same pattern, what is the explicit form of a sequence that represents the situation?

- a. $a_n = 2 \cdot 4^{n-1}$ b. $a_n = 2 \cdot 4^n$ c. $a_n = 4 \cdot 2^{n-1}$ d. $a_n = 4 \cdot 2^n$

10. If $f(x) = -3x + 1$ and $g(x) = 3x - 4$, find $(f - g)(x)$.

- a. $-6x + 7$ b. 5 c. $-6x + 5$ d. $x - 3$

11. If $f(x) = x + 1$ and $g(x) = -2x - 3$, find $(f \circ g)(x)$.

- a. $-3x - 2$ b. $-2x - 2$ c. $2x - 3$ d. $7x + 8$

12. On day 1, your overdue book fine is \$1. Every day after that it increases by \$0.25. Choose the correct explicit formula.

- a. $a_n = 0.25 + 1n$ b. $f(x) = 1 + 0.25n$ c. $f(x) = 1 + 0.25(n - 1)$ d. $f(x) = 0.25 + 1(n - 1)$

13. What kind of sequence is represented by $\{-5, 10, 25, 40, \dots\}$?

- a. Arithmetic b. Geometric c. Exponential d. Neither

14. If the parent graph is $y = 2^x$, how would the graph of $y = 2^{x-1} + 3$ be transformed?

- a. 3 units to the right, 1 unit down b. 3 units to the left, 1 unit down
c. 1 unit to the right, 3 units up d. 1 unit to the left, 3 units up

15. For the sequence:



What is the explicit formula that will help you find the number of triangles in the n^{th} term?

- a. $a_n = 2 + 3(n - 1)$ b. $a_n = 3 + 3(n - 1)$ c. $a_n = 3 + 2(n - 1)$ d. $a_n = 2 + 2(n - 1)$

16. If the table below represents an exponential growth function, what value for Y should go in the blank in the table?

X	Y
1	3
2	9
3	—

- a. 15 b. 18 c. 24 d. 27

17. Write a recursive formula for the sequence: -2, 8, -32, ...

- a. $a_1 = -4, a_n = -2a_{(n-1)}$ b. $a_1 = -2, a_n = \frac{a_{(n-1)}}{4}$
 c. $a_1 = -2, a_n = 4a_{(n-1)}$ d. $a_1 = -2, a_n = -4a_{(n-1)}$

18. Sally invests some money and earns \$100 each day. Bob invest some money and earns 8% interest each day. What is true about these investments?

- a. Bob's represents an exponential function, Sally's represents an exponential function
 b. Bob's represents an exponential function, Sally's represents a linear function
 c. Bob's represents a linear function, Sally's represents an exponential function
 d. Bob's represents a linear function, Sally's represents a linear function

19. In solving this equation, at what step was there a mistake made:

$$-2(x - 1) + 4 = 10$$

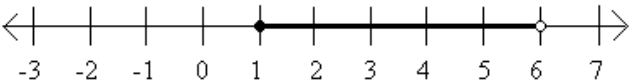
- a. $-2(x - 1) = 6$
 b. $-2x - 2 = 6$
 c. $-2x = 8$
 d. $x = -4$

20. What would be the first step to solve this equation? $\frac{4-x}{8} = -2$

- a. subtract 4 from both sides b. multiply both sides by -2
c. divide both sides by 2 d. multiply both sides by 8

21. Solve: $-5 + |3n| = 16$

- a. $n = 7$ b. $n = 11/3$ c. $n = -7, 7$ d. $n = \text{no solution}$

22. What inequality is graphed? 

- a. $1 < x \leq 6$ b. $x < 1 \text{ or } x \geq 6$ c. $1 \leq x < 6$ d. $x \leq 1 \text{ or } x > 6$

23. Solve the formula for h : $V = \frac{1}{3}\pi r^2 h$

- a. $h = \frac{3V}{\pi r^2}$ b. $r = \frac{V}{3\pi h}$ c. $V = \frac{3h}{\pi r^2}$ d. $h = \frac{Vr^2}{3\pi}$

24. Solve: $2^{n-3} = 64$

- a. $n = 9$ b. $n = 3$ c. $n = 7$ d. $n = 8$

25. Solve this system of equations:
 $4x - y = 8$
 $2x + 2y = 4$

- a. $(-4, 1)$ b. $(2, 0)$ c. $(-3, 2)$ d. $(0, -2)$

26. Adult tickets for the school musical sold for \$8 and students tickets sold for \$5. One hundred and seventy tickets were sold for \$1060. How many tickets of each kind were sold?

- a. 118 adults and 52 students
- b. 27 adults and 143 students
- c. 79 adults and 91 students
- d. 70 adults and 100 students

For questions 27-30, Using a calculator and the data from the table of test scores of these 25 math students.

27. Find the mean, round to the nearest tenth if necessary.

- a. 67.6
- b. 65
- c. 62.1
- d. 18.2

Score	Frequency
50	
55	
60	
65	≡≡
70	≡≡
75	≡≡
80	

28. Find the median.

- a. 75
- b. 67.5
- c. 65
- d. 70

29. What is the range of the data?

- a. 10
- b. 20
- c. 30
- d. 40

30. Classify the data in the table

- a. Skewed left
- b. Uniform
- c. Skewed right
- d. Symmetrical

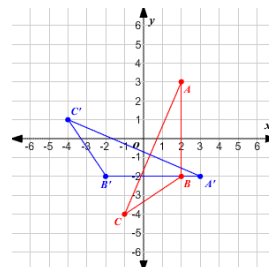
31. Find the best equation (linear or exponential) for the temperature of a hot tub as a function of time.

- a. $y = -1.7x + 106$
- b. $y = 1.4x + 80.96$
- c. $y = 80(1.34)^x$
- d. $y = 1.65(91)^x$

Time (min.)	Temp °F
0	80
3	85
7	91
10	94
12	99
15	105
20	106

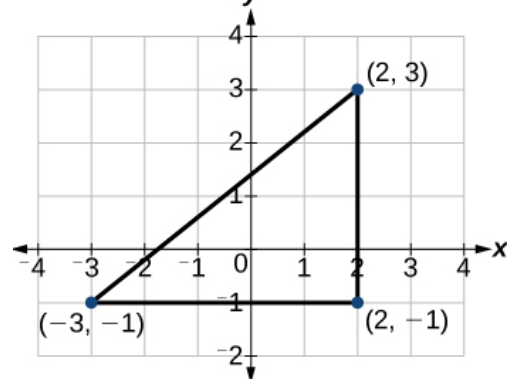
32. What type of transformation is represented in the graph:

- a. reflection
- b. translation
- c. rotation
- d. dilation



33. If a triangle is reflected across the line $y=1$, and then across the x -axis, what one transformation would produce the same results as this double reflection?
- a. reflection b. translation c. rotation d. dilation
34. Because reflections, rotations, and translations are rigid motion transformations, this means that the pre-image and the image have what relation?
- a. they are similar b. they are congruent c. they are opposites d. they are solid
35. Which of the following corresponding parts of a triangle would not be enough information to prove that the two triangles are congruent?
- a. two corresponding sides and the non-included angle are congruent
 b. all three corresponding sides are congruent
 c. two corresponding sides and the included angle are congruent
 d. the hypotenuse and a corresponding leg in a right triangle are congruent
36. Which of the following linear equations would be perpendicular to the equation $y = 2x + 7$?
- a. $y = -2x + 7$ b. $y = 7x + 2$ c. $y = -1/2x + 7$ d. $y = 2x - 3$
37. Which of the following linear equations would be parallel to the equation $y = 4x - 1$?
- a. $y = 4x + 7$ b. $y = -x + 4$ c. $y = -1/4x + 7$ d. $y = -4x - 3$

Given the triangle $A(-3, -1)$, $B(2, 3)$, and $C(2, -1)$, answer questions 38-40



38. What is the length of \overline{BC} ?
- a. 5 units b. 5.5 units c. 4 units d. 6.4 units
39. What is the perimeter of the triangle?
- a. 15.4 units b. 20 units c. 10.5 units d. 12 units
40. What is the area of the triangle?
- a. 8 units^2 b. 14 units^2 c. 10 units^2 d. 20 units^2