

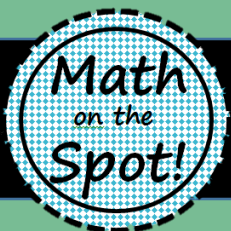
STAAR Algebra 1 EOC

Reporting
Category **3**

Assessment Items

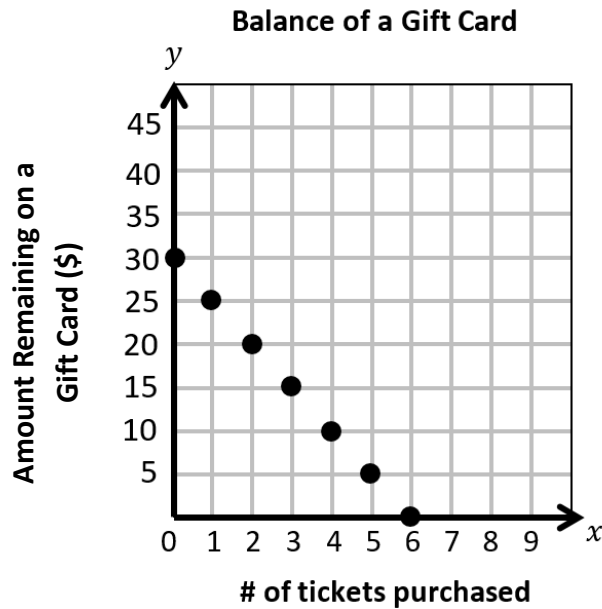
*Includes 28 Multiple Choice and
4 Open Ended Questions*

- Domain and Range of Linear Functions
- Writing Linear Equations
- Writing Systems of Linear Equations
- Solving Linear Equations and Inequalities in One Variable (Distributive Property and Variables on Both Sides)
- Solving Systems of Linear Equations
- Direct Variation
- Writing Linear Inequalities



Algebra 1

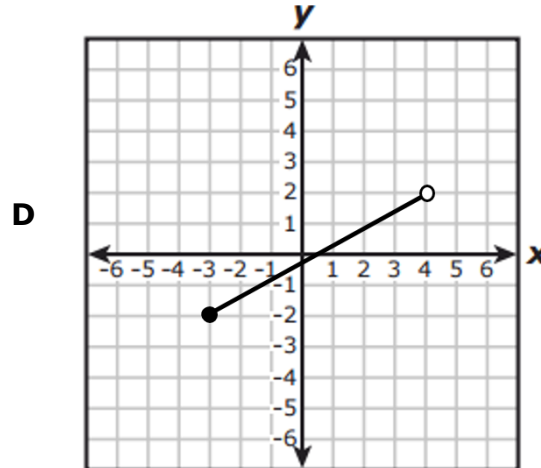
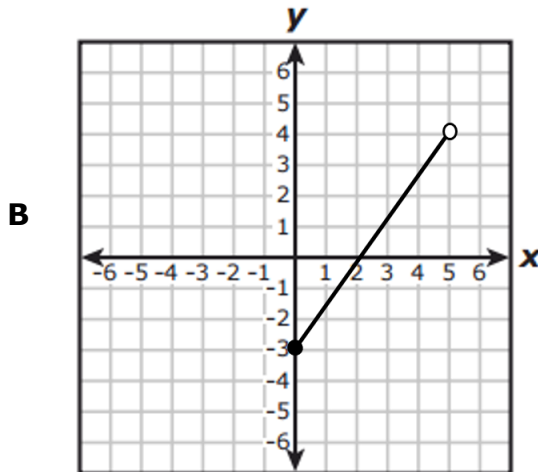
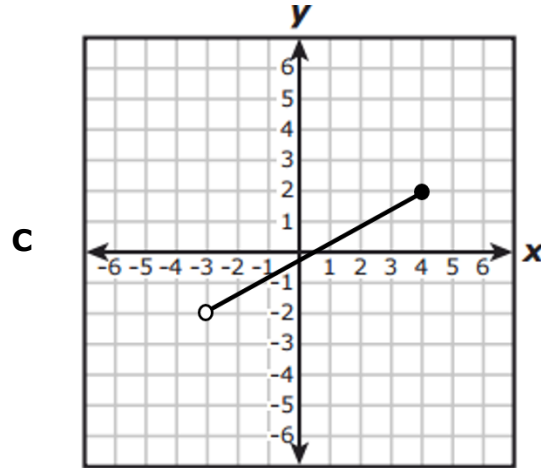
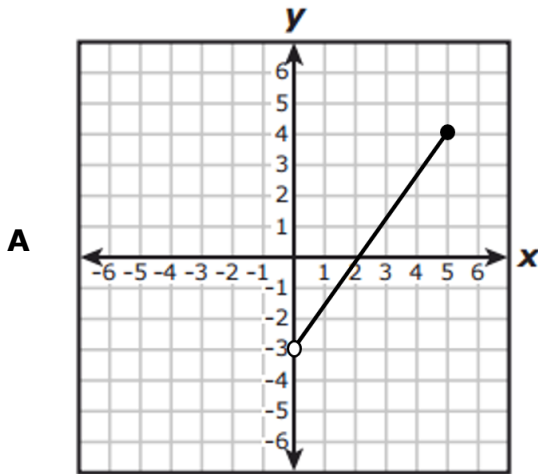
1. The graph shows the relationship between the amount of money remaining on a gift card and the number of movie tickets purchased.



What is the domain of the function for this situation?

- A** $0 \leq x \leq 6$
- B** $0 \leq x \leq 30$
- C** $\{0, 1, 2, 3, 4, 5, 6\}$
- D** $\{0, 5, 10, 15, 20, 25, 30\}$
2. What is the range of $f(x) = -2x - 4$?
- A** All real numbers greater than -2
- B** All real numbers greater than or equal to -4
- C** All real numbers greater than -4
- D** All real numbers

3. Which graph represents a function with a range of all real numbers greater than or equal to -3 and less than 4?



4. The amount of gas remaining in a car's gas tank can be found using the function $g(x) = -\frac{1}{25}m + 20$, where m is the number of miles driven. What is the greatest value of the domain for this situation?

Record your answer and fill in the bubbles on your answer document.

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

5. A linear function has an x -intercept of 4 and a y -intercept of -2. Which function represents the same relationship?

- A $x + 2y = 4$
- B $x - 2y = 4$
- C $x + 2y = -4$
- D $x - 2y = -4$

6. The table represents some points on the graph of a linear function.

x	-3.5	1	1.5	3.5	6
y	-10	-1	0	4	9

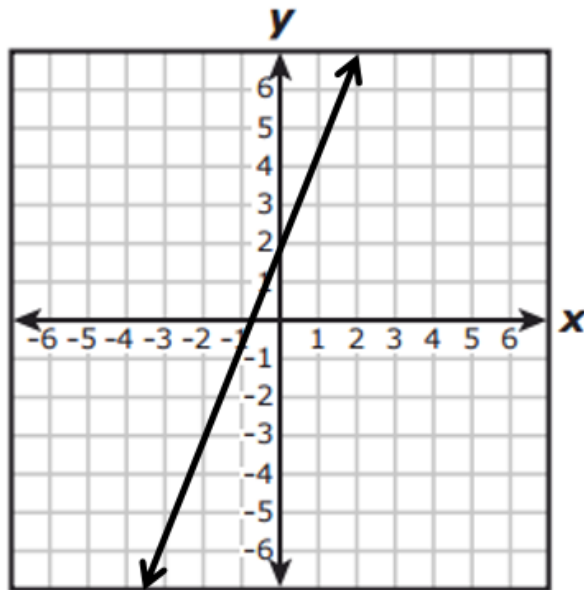
Which function represents the same relationship?

- A $g(x) = -2x - 1.5$
- B $g(x) = -3x - 2$
- C $g(x) = 1.5x - 3$
- D $g(x) = 2x - 3$

7. A 9,293 gallon swimming pool drains at a constant rate of 4 gallons per second. Which function can be used to find the number of gallons remaining after x seconds?

- A $f(x) = 4 - 9,293x$
- B $f(x) = 9,289 - x$
- C $f(x) = 9,293 - 4x$
- D $f(x) = 4x - 9,293$

8. Which equation represents the line shown on the coordinate grid?



- A** $5x - 2y + 4 = 0$
- B** $5x + 2y - 4 = 0$
- C** $y - 3 = \frac{5}{2}(x - 2)$
- D** $y - 2 = \frac{5}{2}(x - 3)$

9. The tables below show the heights of two trees grown in the same year at the same time.

Tree 1

Time (months)	Height (inches)
0	2
1	5.5
4	16
7	26.5
11	40.5

Tree 2

Time (months)	Height (inches)
1	6
3	10
6	16
10	24
11	26

Which system of equations can be used to determine the height of the trees, y , after x months?

A $y = 2x + 4$
 $y = 3.5x + 2$

C $y = 4x + 2$
 $y = 2x + 3.5$

B $y = 3.5x + 4$
 $y = 2x + 2$

D $y = 4x + 3.5$
 $y = 2x - 2$

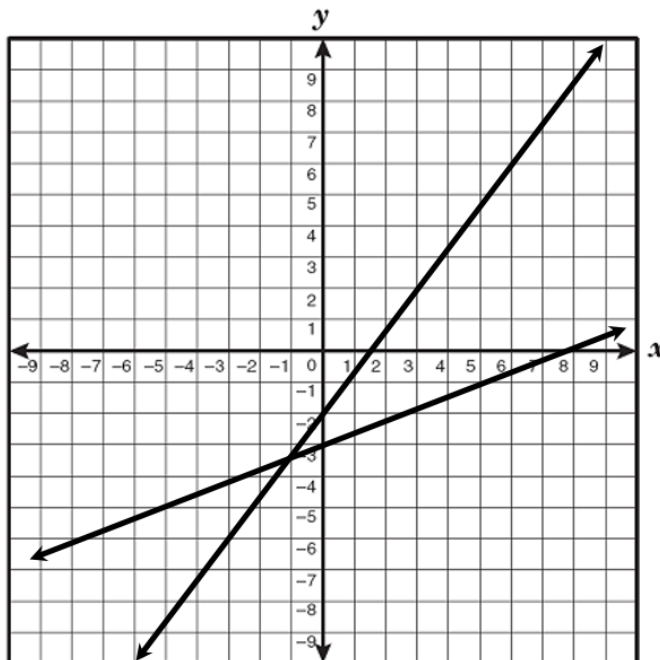
10. Which system of equations can be represented by the graph below?

A $y = \frac{5}{2}x - 3$
 $y = \frac{3}{4}x - 2$

B $y = 3x + \frac{2}{5}$
 $y = -2x + \frac{4}{3}$

C $y = \frac{2}{5}x - 3$
 $y = \frac{4}{3}x - 2$

D $y = 3x + \frac{5}{2}$
 $y = 2x + \frac{3}{4}$



11. A drama club earned \$662.50 from a production where 85 adult tickets were sold and 65 student tickets were sold. An adult ticket costs \$2.50 more than a student ticket. Which system of equations can be used to find a , the cost of an adult ticket, and s , the cost of a student ticket?

A $85a + 65s = 662.50$
 $a + s = 2.50$

B $85a + 65s = 662.50$
 $a - s = 2.50$

C $65a + 85s = 662.50$
 $a + s = 2.50$

D $65a + 85s = 662.50$
 $a - s = 2.50$

12. What value of x makes the equation $4x - 3(x + 2) = 5(x - 3)$ true?

- A** $x = -\frac{5}{4}$
- B** $x = \frac{5}{4}$
- C** $x = -\frac{9}{4}$
- D** $x = \frac{9}{4}$

13. What is the solution to $6(5x - 3) = \frac{1}{3}(24x + 12)$?

- A** 1
- B** 0.7
- C** 0.4
- D** -1

14. What value of x makes the equation $2.25(4x - 4) = -2(1 - 5x) + 12$ true?

Record your answer and fill in the bubbles on your answer document.

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

15. What is the solution to this system of equations?

$$3x + 4y = 11$$

$$y = \frac{x - 17}{2}$$

- A** (-4, 9)
- B** (-9, 4)
- C** (4, -9)
- D** (9, -4)

16. A bookstore sold a total 43 paperback and hardback books. Each paperback book costs \$4.50, and each hardback book costs \$12.00. If the bookstore made a total of \$276 in sales for one day, how many paperback books did they sell?

Record your answer and fill in the bubbles on your answer document.

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

17. What is the solution to the system of equations below?

$$-2x + 15y = -32$$

$$7x - 5y = 17$$

- A** The ordered pair $(-16, 0)$ is the solution.
 - B** The ordered pair $(1, -2)$ is the solution.
 - C** There are an infinite number of solutions.
 - D** There is no solution.
18. One wall inside an art studio is used to display paintings with oval frames and rectangular frames. There are a total of 68 paintings on this display. There are 3 times as many rectangular frames as there are oval frames in this display. How many oval frames and rectangular frames are on the display?
- A** 44 oval frames and 24 rectangular frames
 - B** 51 oval frames and 17 rectangular frames
 - C** 24 oval frames and 44 rectangular frames
 - D** 17 oval frames and 51 rectangular frames

19. Which equation in point-slope form has a graph that passes through the points (5, -3) and (7, 17)?

A $y + 3 = 10(x - 5)$

B $y - 3 = 10(x + 5)$

C $y + 5 = 10(x - 3)$

D $y - 5 = 10(x + 3)$

20. Which equation in standard form has a graph that passes through the point (-3, 2) and has a slope of $\frac{4}{3}$?

A $4x - 3y = -18$

B $4x + 3y = -18$

C $4x - 3y = 18$

D $4x + 3y = 18$

21. An individual's weight on the moon varies directly with their weight on Earth. A person who weighs 100 pounds on Earth, weighs 16.6 pounds on the moon. Which function represents this situation?

- A $y = 1.66x$
- B $y = 16x$
- C $y = 0.166x$
- D $y = 6.02x$

22. The distance a train travels varies directly with the amount of time that has elapsed since departure. If the train travels 475 miles in 9.5 hours, how many miles did the train travel after 3.5 hours?

Record your answer and fill in the bubbles on your answer document.

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

23. The table represents some points on the graph of linear function g .

x	$g(x)$
-3	11
0	2
4	-10
5	-13
8	-22

Which equation describes a line that is parallel to g and contains the point $(1, -2)$?

- A** $y = 3x - 1$
- B** $y = -3x + 1$
- C** $y = -\frac{1}{3}x + 2$
- D** $y = \frac{1}{3}x - 2$

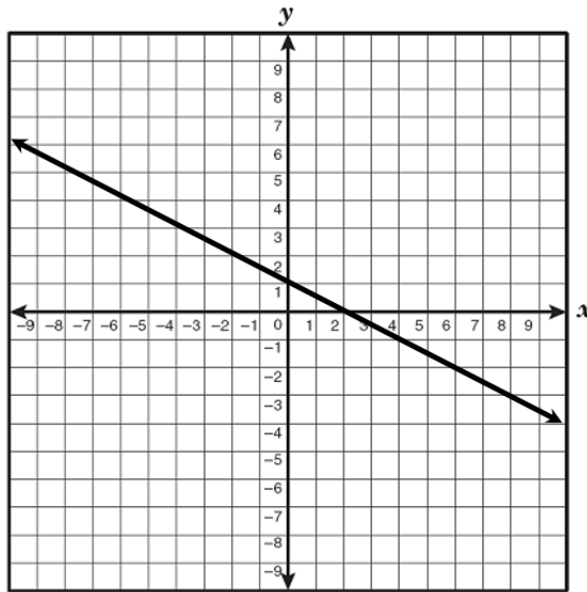
24. What is the equation of a line that passes through the point $(-3, 27)$ and is parallel to $5x + y = -4$?

- A** $y = -\frac{1}{5}x + 12$
- B** $y = \frac{1}{5}x + 27$
- C** $y = -5x + 12$
- D** $y = 5x + 27$

25. What is the equation of a line that passes through the point $(6, 5)$ and is perpendicular to $y = -\frac{2}{3}x + 10$?

- A $y = -\frac{2}{3}x - 4$
- B $y = \frac{2}{3}x + 5$
- C $y = -1.5x + 4$
- D $y = 1.5x - 4$

26. The graph of line f is shown below.



Which equation describes a line that is perpendicular to line f that contains the point $(-3, -14)$?

- A $y = 2x - 8$
- B $y = -2x + 8$
- C $y = -\frac{1}{2}x + 1$
- D $y = 2x + 1$

27. Which of the following statements is true about the linear function $f(x) = 5$?

- A** Function f is perpendicular to the x -axis and has an undefined slope.
- B** Function f is parallel to the x -axis and has an undefined slope.
- C** Function f is perpendicular to the x -axis and has a slope equal to zero.
- D** Function f is parallel to the x -axis and has a slope equal to zero.

28. Which statement is true about a line containing the point $(2, -3)$ and perpendicular to the y -axis?

- A** The equation of the line is $x = 2$, and the slope is undefined.
- B** The equation of the line is $y = -3$, and the slope of the line is undefined.
- C** The equation of the line is $x = 2$, and the slope of the line is zero.
- D** The equation of the line is $y = -3$, and the slope of the line is zero.

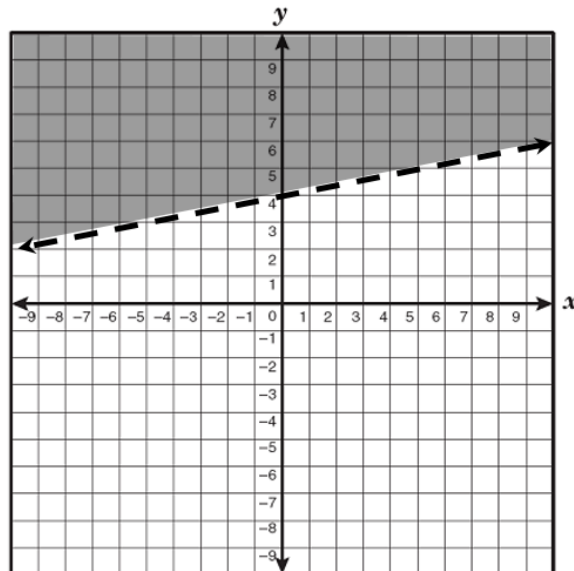
29. The table shows four points that are on a boundary line of an inequality.

x	y
-3	25
1	-3
4	-24
7	-45

The boundary line and the point $(0, 0)$ are in the solution set of the inequality. Which inequality represents this situation?

- A** $y \geq -7x + 4$
- B** $y \leq -7x + 4$
- C** $y > -7x + 4$
- D** $y < -7x + 4$

30. Which inequality can be represented by the graph below?



- A** $x + 5y < -20$
- B** $x - 5y < -20$
- C** $x + 5y > -20$
- D** $x - 5y > -20$

31. Which inequality describes all of the solutions to $-2(0.5 - 4x) \geq -3(4 - 3.5x)$?

- A** $x \geq -4.4$
- B** $x \leq -4.4$
- C** $x \geq 4.4$
- D** $x \leq 4.4$

32. Which inequality describes all of the solutions to $-3(x + 3) + 2x < -15 - 7x$?

- A** $x > 1$
- B** $x < -3$
- C** $x < -1$
- D** $x > 3$

Reporting Category #3 Answer Key:

Texas TEK	Question	Answer
A.2 A (R)	1	C
A.2 A (R)	2	D
A.2 A (R)	3	B
A.2 A (R)	4	500
A.2 C (R)	5	B
A.2 C (R)	6	D
A.2 C (R)	7	C
A.2 C (R)	8	A
A.2 I (R)	9	A
A.2 I (R)	10	C
A.2 I (R)	11	B
A.5 A (R)	12	D
A.5 A (R)	13	A
A.5 A (R)	14	-19
A.5 C (R)	15	D
A.5 C (R)	16	32
A.5 C (R)	17	B

Texas TEK	Question	Answer
A.5 C (R)	18	D
A.2 B (S)	19	A
A.2 B (S)	20	A
A.2 D (S)	21	C
A.2 D (S)	22	175
A.2 E (S)	23	B
A.2 E (S)	24	C
A.2 F (S)	25	D
A.2 F (S)	26	A
A.2 G (S)	27	D
A.2 G (S)	28	D
A.2 H (S)	29	B
A.2 H (S)	30	B
A.5 B (S)	31	D
A.5 B (S)	32	C

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