8th Grade Algebra 1 STAAR Practice
Week 2
Mastery Machine: Day 1

Directions: Complete this quiz without any assistance other than a calculator. Show work and use test-taking strategies that you will use on the EOC test. After you are done, bring it to a tutor or teacher to grade. If they are busy, place in the “to be graded” box and move on to another quiz.

1) Which graph represents the equation $x = -2$?

2) Super Painters charges $1.00 per square foot plus an additional fee of $25.00 to paint a living room. If $x$ represents the area of the walls of Francesca’s living room, in square feet, and $y$ represents the cost, in dollars, which graph best represents the cost of painting her living room?
3) In a linear equation, the independent variable increases at a constant rate while the dependent variable increases at a constant rate. The slope of this line is
   a. zero
   b. negative
   c. positive
   d. undefined

4) **If a line is horizontal, its slope is**
   a. 1
   b. 0
   c. undefined
   d. negative

5) Which equation represents a line that is parallel to the line whose equation is $2x + 3y = 12$?
   a. $6y - 4x = 2$
   b. $6y + 4x = 2$
   c. $4x - 6y = 2$
   d. $6x + 4y = -2$
Mastery Machine: Day 2

Directions: Complete this quiz without any assistance other than a calculator. Show work and use test-taking strategies that you will use on the EOC test. After you are done, bring it to a tutor or teacher to grade. If they are busy, place in the “to be graded” box and move on to another quiz.

1)

A ball is thrown straight up in the air. The graph below illustrates how the velocity of the ball changes over time. The horizontal axis represents time, $t$, in seconds, and the vertical axis represents velocity, $v$, in feet per second.

[Graph of ball motion]

Which of the following represents the equation of this graph?

A) $v = 4 - 128t$
B) $v = 128 - 32t$
C) $v = 128 - 4t$
D) $v = 32 - 128t$

2)

Which equation represents a line that is parallel to the line $y = 3 - 2x$?

F) $4x + 2y = 5$
G) $2x + 4y = 1$
H) $y = 4x - 2$
J) $y = 3 - 4x$
3) Which of the following represents the equation of the graph below?

![Graph with a straight line](image)

- **F** $y = 0.5x + 2$
- **G** $y = 2x + 2$
- **H** $y = 0.5x - 1$
- **J** $y = 2x - 1$

4) What is an equation of the line that passes through the point $(3, -1)$ and has a slope of 2?

a. $y = 2x + 5$

b. $y = 2x - 1$

c. $y = 2x - 4$

d. $y = 2x - 7$

5) What is the equation of a line that passes through the points $(0, -3)$ and $(-4, 0)$?

- **A** $3x + 4y = 3$
- **B** $-3x + 4y = 3$
- **C** $4x + 3y = 12$
- **D** $3x + 4y = -12$
Mastery Machine: Day 3

Directions: Complete this quiz without any assistance other than a calculator. Show work and use test-taking strategies that you will use on the EOC test. After you are done, bring it to a tutor or teacher to grade. If they are busy, place in the “to be graded” box and move on to another quiz.

1) The graph of which of the following equations is parallel to the graph of $y = 3x - 4$?
   
   A) $y = -3x + 4$
   B) $y = 4x - 3$
   C) $y = 3x + 4$
   D) $y = 3$

2) Which equation represents the line shown in the graph below?

   ![Graph](image)

   A) $y = \frac{1}{2}x + 3$
   B) $y = 3x + \frac{1}{2}$
   C) $y = 2x + 3$
   D) $y = 3x + 2$
3) A graph is shown on the grid below.

Which of the following equations best represents the graph?

- y = -3x + 2
- y = -3x - 2
- y = 3x + 2
- y = 3x - 2

4) What is the slope of the line that passes through the points (-6, 1) and (4, -4)?
   a. -2
   b. 2
   c. \(-\frac{1}{2}\)
   d. \(\frac{1}{2}\)

5) Which equation represents a line that is parallel to the line \(y = 3 - 2x\)?
   a. \(4x + 2y = 5\)
   b. \(2x + 4y = 1\)
   c. \(y = 3 - 4x\)
   d. \(y = 4x - 2\)
Mastery Machine: Day 4

Directions: Complete this quiz without any assistance other than a calculator. Show work and use test-taking strategies that you will use on the EOC test. After you are done, bring it to a tutor or teacher to grade. If they are busy, place in the “to be graded” box and move on to another quiz.

1)

If $y$ varies directly as $x$, and $y = 16$ when $x = 3$, what is the value of $y$ when $x = 9$?

2)

If $x$ and $y$ vary directly, and $x = 12$ when $y = 4$, what is the value of $x$ when $y = 1$?
3)

The number of chirps made by a cricket varies directly as the temperature in degrees Celsius. If at 12°C a cricket chirps 30 times per minute, how many times per minute will the cricket chirp at 20°C?

4)

If x varies directly as y, and x = 8 when y = 24, what is the value of x when y = 6?

- F) 1
- G) 2
- H) 3
- J) 4

5)

A bank charges a service fee of $3.50 per month for a savings account. If a customer has an initial balance of $2500 in her account and authorizes an automated monthly deposit of $150, which equation below shows how a customer can determine the effect of the service fee on her account balance, b, after m, months.

A) b = 2650 + 3.5m
B) b = 2500 + 146.5m
C) m = 2500 + 153.5b
D) m = 2650 - 3.5b
Mastery Machine: Day 5

Directions: Complete this quiz without any assistance other than a calculator. Show work and use test-taking strategies that you will use on the EOC test. After you are done, bring it to a tutor or teacher to grade. If they are busy, place in the “to be graded” box and move on to another quiz.

1) When rice is prepared, the amount of rice varies directly as the amount of water required. If 2 cups of rice requires 4.5 cups of water, what is the total number of cups of water needed to prepare 5 cups of rice?

F 9  
G 10  
H 11.25  
J 22.5  

2) If x varies directly as y, and x = 3 when y = 4, what is the value of x when y = 20?
3)

If $y$ varies directly as $x$, and $y = 5$ when $x = 6$, what is the value of $y$ when $x = 18$?

4)

A shoe store owner can purchase sports shoes at the wholesale price of $35.00 per pair. The owner then marks the shoes to sell in his retail store for $105.00. Which of the statements given below are valid conclusions regarding the profit the owner will earn from his retail sales.

I. The owner can determine the profit he will earn from the sale of $x$ pairs of shoes using the equation $p = 70x$.
II. If an owner purchases 165 pairs of shoes wholesale and sales 80% of those shoes retail, his total profit will equal $8085.00.
III. If the owner purchases 165 pairs of shoes, he must sale at least 83 pairs for his profit to exceed his cost.
IV. If an owner sells 250 pairs of shoes, he will earn a profit of $26,250.00.

A) I, III  
B) II, IV  
C) I, III, IV  
D) I, II, III

5)

A direct variation exist between $x$ and $y$. When $x = 4$, $y = 3$. What is the value of $y$ when $x = 10$.

A) $y = 7.5$  
B) $y = 9$  
C) $y = 2.5$  
D) $y = 12$