

Exam IV Review Sheet

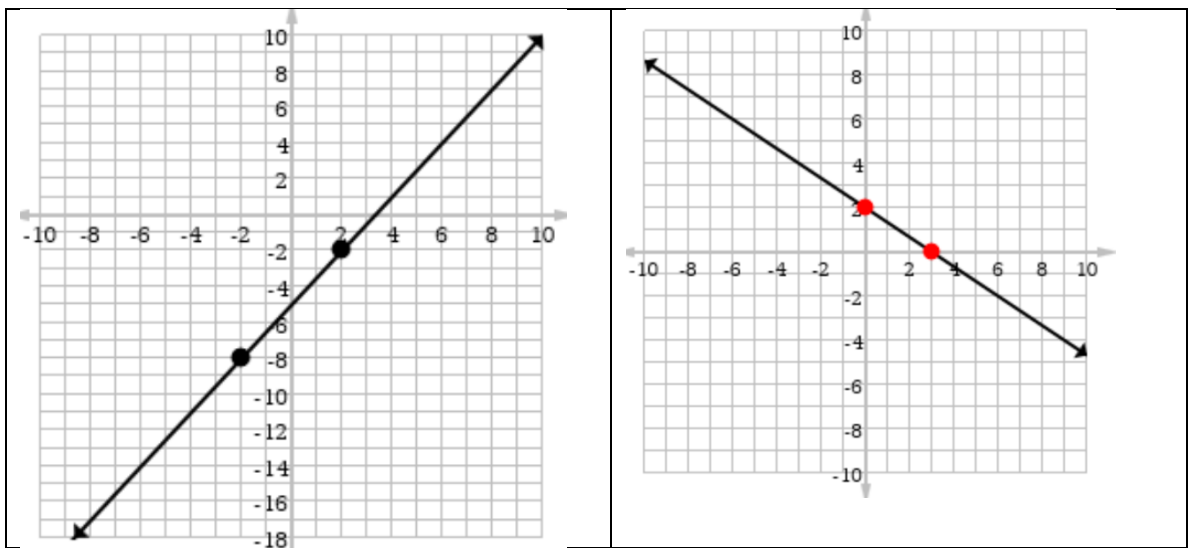
NAME _____

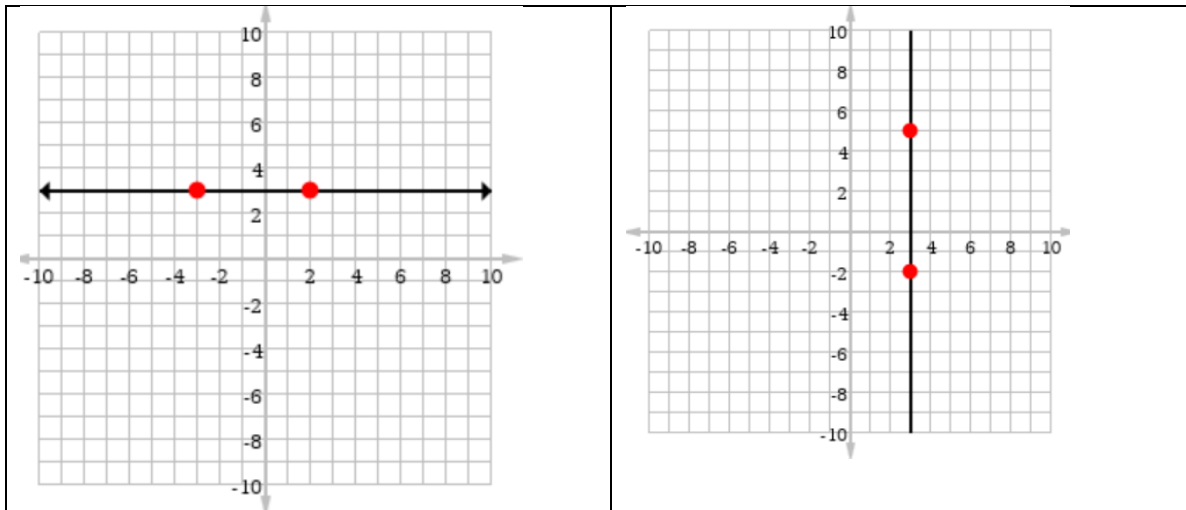
You are eligible to take Exam IV only if your review is completed.

- Sketch the graph of the lines below by extracting information from the equation of the line. Please show how all the components from the equation show up in the graph of the line. Label all relevant information. All lines need to be drawn using a ruler. Any line drawn without the aid of the ruler will get no credit.
 - $2x - 3y = -6$
 - $y = 4 = 2(x + 5)$
 - $x = \frac{-3}{5}(y - 2) - 2$
 - $y = \frac{2}{3}(x - 5) + 4$
- Find equations of lines below when certain information is given to you.
 - Parallel to the line $3x - 5y = 7$ and passes through $(-1, 3)$
 - Perpendicular to the line $2x - y = 4$ and passes through $(2, -4)$
 - Passing through the points $(-1, 3)$, and $(2, -1)$
 - Has x -intercept of 5 and slope is $-\frac{3}{2}$
 - Has x -intercept of -3 and y -intercept of 5.
 - Passes through $(4, 3)$
- Owners of a recreation area are filling a small pond with water. They are adding water at a rate of 35 liters per minute. There are 700 liters in the pond to start. Let W represent the amount of water in the pond (in liters), and let T represent the number of minutes that water has been added. Write an equation relating W to T and then graph your equation using the axes below.

Equation: _____

- Write an equation of the line below.





5. The equation of a line is given as $-3x - 5y = -15$. Find the Slope, and the y-intercept. Then use them to graph the line.

Slope: _____

y-intercept _____

6. Consider the line $y = \frac{3}{2}x - 2$.
- Find the equation of the line that is parallel to this line and passes through the point (9,6).
 - Find the equation of the line that is perpendicular to this line and passes through the point (9,6).

7. For each ordered pair, determine whether it is a solution to the system of equation.

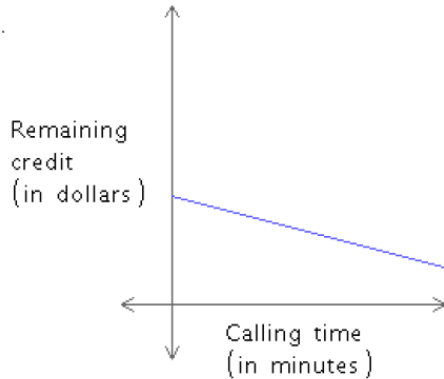
$$\begin{cases} 5x - 3y = 7 \\ y = -2x - 6 \end{cases}$$

(x, y)	Is it a solution	
	Yes	No
$(-8, 10)$	<input type="checkbox"/>	<input type="checkbox"/>
$(-1, -4)$	<input type="checkbox"/>	<input type="checkbox"/>
$(0, -6)$	<input type="checkbox"/>	<input type="checkbox"/>

10. A small publishing company is planning to publish a new book. The production costs will include one-time fixed costs (such as editing) and variable costs (such as printing). The one-time fixed costs will total \$76,322. The variable costs will be \$10 per book. The publisher will sell the finished product to bookstores at a price of \$25.50 per book. How many books must the publisher produce and sell so that the production costs will equal the money from sales?

11.

The credit remaining on a phone card (in dollars) is a linear function of the total calling time made with the card (in minutes). The remaining credit after 31 minutes of calls is \$21.28 and the remaining credit after 68 minutes of calls is \$16.84. What is the remaining credit after 97 minutes of calls?



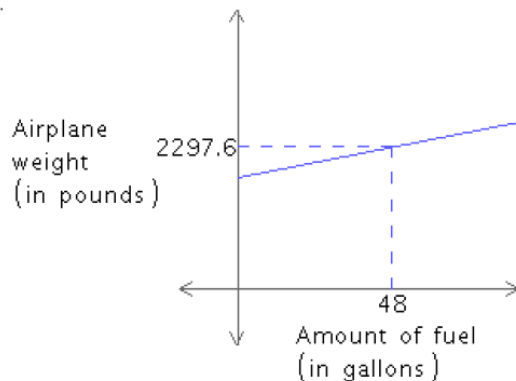
12. Rueben's gas tank is $\frac{2}{5}$ full. After he buys 6 gallons of gas, it is $\frac{7}{10}$ full. How many gallons can Rueben's tank hold?

13. The sum of two numbers is 42. One number is two times as large as the other. What are the numbers?

14.

Suppose that the weight (in pounds) of an airplane is a linear function of the total amount of fuel (in gallons) in its tank. When graphed, the function gives a line with a slope of 6.2. See the figure below.

With 48 gallons of fuel in its tank, the airplane has a weight of 2297.6 pounds. What is the weight of the plane with 77 gallons of fuel in its tank?



15. Make word problem where you need to use the knowledge of lines.

16. Create a line that passes through the point $(-5, 2)$. Is the answer you gave the only answer? Explain why.

