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The "Peralta Formula" for blood flow rate is given by $F = \frac{p_1 - p_2}{r}$, where F is the flow rate, p_1 is the initial pressure, p_2 is the final pressure, and r is the resistance created by the blood vessel size.

Solve the equation for p_2

$$p_2 = p_1 - Fr$$

If a and b are negative numbers, find an expression that correctly solves for x in terms of a and b:

$$3ax \geq ab - 2bx$$

$$x \leq \frac{ab}{3a + 2b}$$

Identify the slope and y-intercept:

$$9x + 2y = 12$$

y-intercept: 6
slope: -4.5

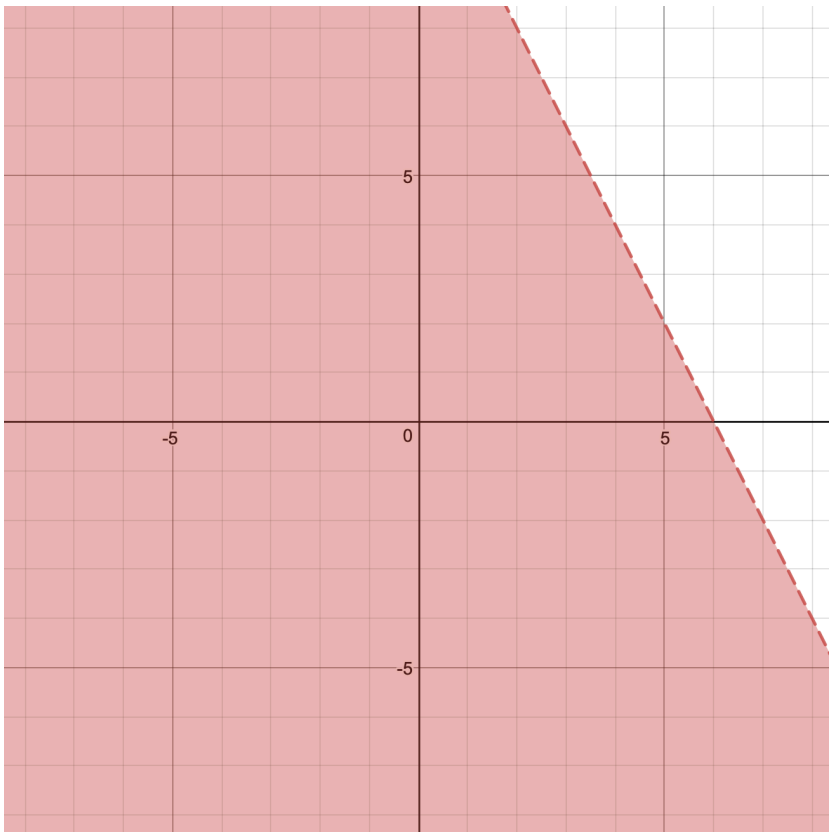
Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has $2.10 in change in his pocket. Write an inequality that can be used to find *m*, the maximum number of minutes that Tony can talk on the phone. Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.

$$0.25 + 0.1(m - 4) \leq 2.10$$

22

Graph the inequality:

$$y + 2x - 4 < 8$$



Peter begins his kindergarten year able to spell 10 words. He is going to learn to spell 2 new words every day. Write an inequality that can be used to determine how many days, *d*, it takes Peter to be able to spell *at least* 75 words. Then solve the inequality.

$$10 + 2d \geq 75$$

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Solve for x in terms of a and b:

$$b(x - 4) = ax + 8b$$

$$x = \frac{12b}{b - a}$$

The "Sweeney Formula" for blood flow rate is given by $F = p_1 - \frac{p_2}{r}$, where F is the flow rate, p_1 is the initial pressure, p_2 is the final pressure, and r is the resistance created by the blood vessel size.

Solve the equation for p_2

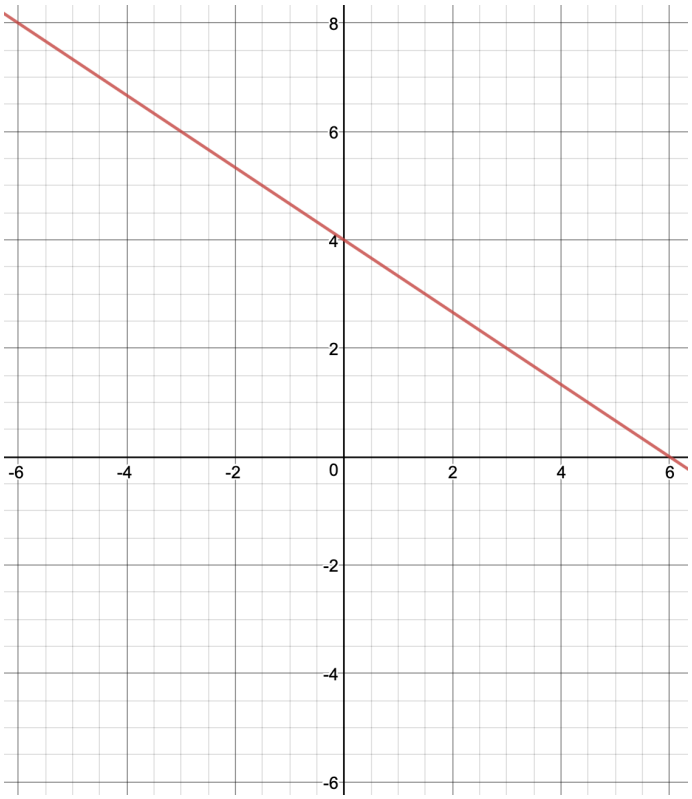
$$p_2 = rp_1 - rF$$

Identify the slope and y-intercept of the graph that passes through the points $(-2, 4)$ and $(1, 7)$

y-intercept: 6
slope: 1

Graph the equation:

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



Students in a ninth grade class measured their heights, h, in centimeters. The height of the shortest student was 155 cm, and the height of the tallest student was less than 190 cm.

Create and graph an inequality to represent this situation.

$$155 \leq h < 190$$

Solve the inequality:

$$7x + 12 - 5x < 2x + 3(x - 1)$$

If x is a number in the interval [4, 8], state all the integers that satisfy the given inequality.

6, 7, 8

Marvin solved the equation $3x + 1 = 2^x - 3$ by creating a table (below). Find the solution to the equation.

x	$3x + 1$	$2^x - 3$
1	4	-1
2	7	1
3	10	5
4	13	13
5	16	29

4

Natasha is planning a school celebration and wants to have live music and food for everyone who attends. She has found a band that will charge her $750 and a caterer who will provide snacks and drinks for $2.25 per person. If her goal is to keep the average cost per person between $2.75 and $3.25 (inclusive), create and graph a compound inequality to represent the number of people, p, that must attend.

[Note: This may be the most challenging type of question on the test, so pay attention!]

$$750 \leq p \leq 1500$$

Reason:

1. The cost per person is made up of the band and the food
2. The food is \$2.25 per person.
3. The band is \$750 in total.
4. Situation 1: Total cost per person is \$2.75. Since the food is \$2.25 per person, the band will be \$0.50 per person. Divide $750 \div 0.50 = 1{,}500$ people.
5. Situation 2: Total cost per person is \$3.25. Since the food is \$2.25 per person, the band will be \$1.00 person. Divide $750 \div 1 = 750$ people.
6. Conclusion: Minimum of 750 people and maximum of 1,500 people. This is written - $750 \leq p \leq 1500$

If $a = 5$, find the largest integer for x that will make the inequality true:

$$a(x - 3) + a < 2x + 7a$$