

Algebra 2

- 1. Linear Relationships
 - 1.2 Graphing Linear Relationships

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Exercises

Find all solutions to exercises via

https://mathleaks.com/study/graphing_linear_relationships or scan the QR code



1.1 Graph the equations using the intercepts.

A $9x + 5y = 45$

B $-2x + 6.4y = 16$

C $8x - 2y = -8$

1.2 Draw the graph of the linear function $y = -\frac{1}{2}x + 5$ and use the graph to find its x -intercept.

1.3 Draw the graphs of the following equations on the same set of axes by interpreting and using their slopes and y -intercepts.

◦ $y = 3x - 1$

◦ $y = -2x + 4$

◦ $y = -x - 3$

1.4 Write the equation in standard form with integer coefficients.

A $y + 5 = 3(x - 2)$

B $y = -\frac{3}{4}x - 3.5$

- 1.5** Match each equation with one of the equations written in standard form.

A. $5x - 12y = 6$

B. $-x + 3y = 6$

C. $-4x + y = 7$

D. $4x - y = 10$

A $y = \frac{1}{3}x + 2$

B $1 - y = -4x + 11$

C $y - 3 = 4\left(x - \frac{5}{2}\right)$

D $\frac{5}{6}x - 1 = 2y$

- 1.6** A line is given by the equation $10x + 2y = 11$.

A In which form is the equation given?

B Rewrite the equation of the line in slope-intercept form.

- 1.7** Write the equations in slope-intercept form.

A $3x - 4y = -2$

B $15x + 10y = -5$

C $10x - 5y = -20$

D $3x + y = 7$

E $-x + 2y = -18$

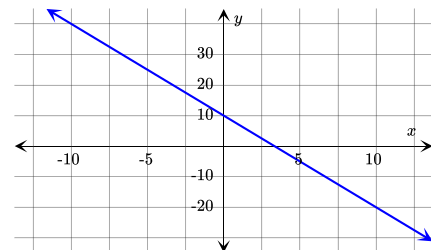
- 1.8** Determine if $(4, -3)$ is a solution to the following inequalities.

A $x + 2y \geq -6$

B $1 \leq -(x + y)$

- 1.9** Shade the area in which $y \geq 1$ in a coordinate plane.

- 1.10** The graph of the inequality $y \leq 10 - 3x$ is drawn.



Which area should be shaded to complete the graph of the inequality?

1.11 Graph the following inequalities.

A $-2x + y < -3$

B $y < x - 1$

C $y + 3x \leq \frac{1}{2}$

1.12 Graph the inequality and determine which of the ordered pairs that are a part of the solution set.

$(-2, 0)$ $(0, 0)$ $(1, 4)$ $(2, -3)$

A $3x + 2y \geq 12$

B $8 - 4y \geq 2x$

2.1 Graph the following inequalities.

A $y \geq -1$

B $y < -3x + 2$

C $x > 2$

2.2 Determine which of the ordered pairs $(0, 0)$, $(4, -1)$, $(-1, 3)$ and $(3, -1)$, that are solutions to the inequality

$$9y + 3 > 15 - 7x.$$

A Algebraically

B Graphically

2.3 Santa's Special Store sells Christmas cards in different colors and sizes. The prices vary, \$10 for the small ones and \$25 for the big ones. One day, the family Rudolphs visits the shop to buy cards. They want to buy Christmas cards with a budget of \$175.

A Write an equation in standard form that describes the situation.

B Give three examples of how many small respectively big cards they can buy.

- 2.4** A bowling teams need to buy new bowling skittles for their summer cup. The skittles kits cost \$1500 and to raise the money the team will sell burgers for \$5 and fries for \$3.
- A** Write an inequality for the numbers of burgers x and fries y the team need to sell to reach at least \$1500.
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- B** Graph the inequality.
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- C** Find five examples of how many burgers respectively fries the team can sell to reach their goal.

- 3.1** When is it not possible to write the line

$$Ax + By = C$$

in slope-intercept form? Justify your answer.

- 3.2** Amalia and Chad own a grocery store. There most profitable products are milk and eggs. A package of milk costs them 75¢ and can be sold for \$1.25. The eggs sell for \$2.5/package and cost Amalia and Chad \$1.5 to buy.
- A** Write an inequality the represents the amount of milk and eggs they need to sell to earn at least \$500.
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- B** Their supplier can only deliver a total of 500 package of milk and 400 packages of eggs. How many packages can they sell and still reach their goal? Graph the situation.