

READY, SET, GO!

Name

Period

Date

READY

Topic: Determining if given values are solutions to a two variable equation.

Identify which of the given points are solutions to the following linear equations.

- | | | |
|--|--|---|
| 1. $3x + 2y = 12$
NO a. $(2, 4)$ $3(2) + 2(4) = 12$
$14 \neq 12$
NO b. $(3, 2)$ (a) is NOT
YES c. $(4, 0)$ a solution
YES d. $(0, 6)$ | 2. $5x - y = 10$
a. $(2, 0)$ YES
b. $(3, 0)$ NO
c. $(0, -10)$ YES
d. $(1, 1)$ NO | 3. $-x + 6y = 10$
a. $(-4, 1)$ YES
b. $(-22, -2)$ YES
c. $(2, 2)$ YES
d. $(10, 0)$ NO |
|--|--|---|

Find the value that will make each ordered pair be a solution to the given equation.

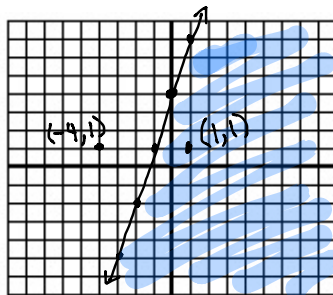
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|---|---|---|
| 4. $x + y = 6$
a. $(2, \underline{4})$ $2 + 4 = 6$
b. $(0, \underline{6})$ $0 + 6 = 6$
c. $(\underline{6}, 0)$ $6 + 0 = 6$ | 5. $2x + 4y = 8$
a. $(2, \underline{1})$ $2(2) + 4(1) = 8$
b. $(0, \underline{2})$ $2(0) + 4(2) = 8$
c. $(\underline{4}, 0)$ $2(4) + 4(0) = 8$ | 6. $3x - y = 8$
a. $(2, \underline{-2})$ $3(2) - (-2) = 8$
b. $(0, \underline{-8})$ $3(0) - (-8) = 8$
c. $(\underline{8/3}, 0)$ $3(\underline{8/3}) - (0) = 8$ |
|---|---|---|

SET

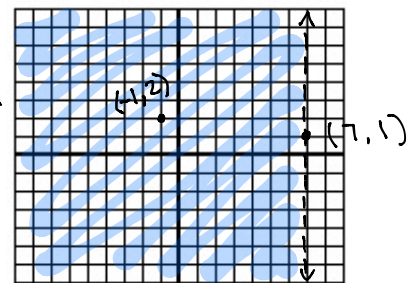
Topic: Graphing linear inequalities

Graph the following inequalities on the coordinate plane. Name one point that is a solution to the inequality and one point that is not a solution. Show algebraically and graphically that your points are correct.

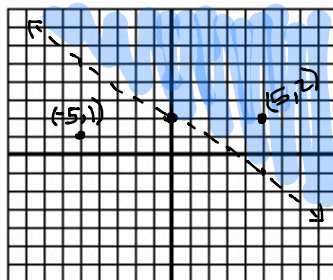
7. $y \leq 3x + 4$
 $(1, 1)$: $1 \leq 3(1) + 4$
 $1 \leq 7$ True
 $(1, 1)$ is a solution
 $(-4, 1)$: $1 \leq 3(-4) + 4$
 $1 \leq -8$ False
 $(-4, 1)$ is NOT a solution



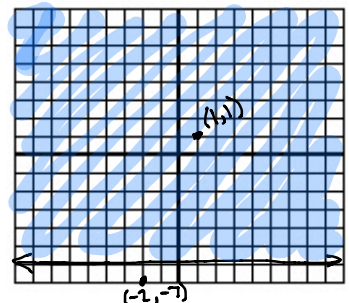
8. $x < 7$
 $(-1, 2)$: $-1 < 7$ True
 $(-1, 2)$ is a solution
 $(7, 1)$: $7 < 7$ False
 $(7, 1)$ is NOT a solution



9. $y > -\frac{3}{5}x + 2$
 $(5, 2)$: $2 > -\frac{3}{5}(5) + 2$
 $2 > -1$ True
 $(5, 2)$ is a solution
 $(-5, 1)$: $1 > -\frac{3}{5}(-5) + 2$
 $1 > 5$ False
 $(-5, 1)$ is NOT a solution



10. $y \geq -6$
 $(1, 1)$: $1 \geq -6$ True
 $(1, 1)$ is a solution
 $(-2, -7)$: $-7 \geq -6$ False
 $(-2, -7)$ is not a solution



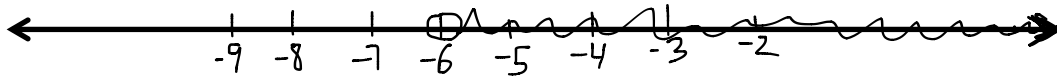
GO

Topic: Solving inequalities

Follow the directions for each problem below. (Show your work!)

11. $10 - 3x < 28$
 $-10 \quad -10$
 $-3x < 18$
 $x > -6$

a) Solve for x. Then graph the solution on the number line.



b) Select an x-value from your graph of the solution of the inequality. Replace x in the original inequality $10 - 3x < 28$ with your chosen value. Does the inequality hold true? YES
 $x = -2$
 $10 - 3(-2) < 28$
 $10 + 6 < 28$
 $16 < 28$

c) Select an x-value that is outside of the solution set on your graph. Replace x in the original inequality $10 - 3x < 28$ with your chosen value. Does the inequality still hold true? NO
 $x = -8$
 $10 - 3(-8) < 28$
 $10 + 24 < 28$
 $34 < 28$
 False

12. $4x - 2y \geq 6$

a) Solve for y. $y \leq 2x - 3$

b) Rewrite your inequality as an equation. In other words, your solution will say $y =$, instead of $y \geq$ or $y \leq$.
 When you use the equal sign, the expression represents the equation of a line. $y = 2x - 3$

c) Graph your equation.

d) Name the y-intercept. $b = -3$

e) Identify the slope. $m = 2$

f) Select a point that is above the line. $(1, 1)$

g) Replace the x-value and y-value of your chosen point in the inequality $4x - 2y \geq 6$.
 $4(1) - 2(1) \geq 6$
 $2 \geq 6$

h) Is the inequality still true? NO

i) Select a point that is below the line. $(3, 1)$

j) Replace the x-value and y-value of your chosen point in the inequality $4x - 2y \geq 6$.
 $4(3) - 2(1) \geq 6$
 $10 \geq 6$

k) Is the inequality still true? YES

l) Explain which side of the line should be shaded. Below makes the inequality true.

m) Decide whether the line should be solid or dotted. Justify your decision.

It should be solid because points that are on the line (equal) make the inequality true, so they are solutions.

