LESSON MAKER PRO

Points on the Line

Which points solve the equation?

HIGH SCHOOL · MT.CORE.ALG.FUN.6

MT.CORE.ALG.FUN.6 "Understand that a graph of an equation in two variables is the set of all of its solutions plotted in a coordinate plane."

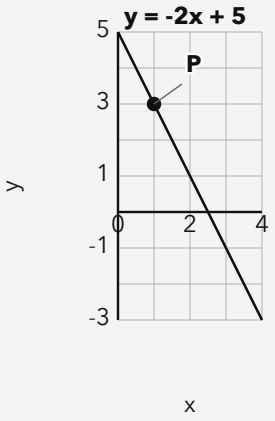
NAME _____ DATE _____

THE BIG IDEA

Every point on a graph is a solution to its equation. To check a point, substitute its x-value into the equation. If the result equals its y-value, the point is on the graph.

WORKED EXAMPLE

Does P lie on the graphed line?



1. P is (1, 3), so x = 1 and y = 3.
2. Substitute x: -2(1) + 5 = 3.
3. The result equals P's y-value.

Answer: Yes, P lies on the line.

PRACTICE 4 problems

1 Does (4, 9) lie on y = 3x - 3?

ANSWER _____

2 Does (-2, 5) lie on y = -3x + 1?

ANSWER _____

3 Find y so (3, y) lies on y = 4x - 6.

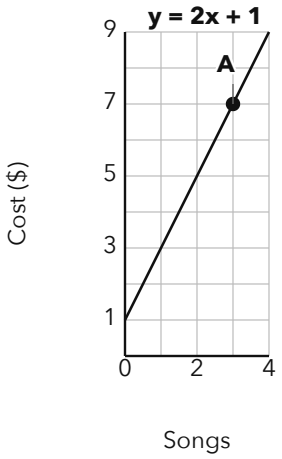
ANSWER _____

4 Find x so (x, -4) lies on y = 3x + 8.

ANSWER _____

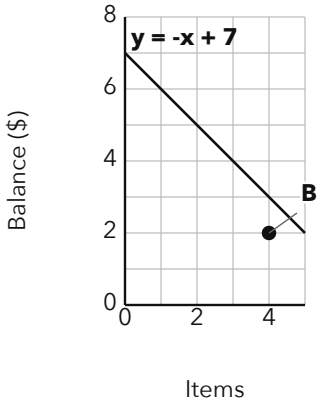
APPLY IT Show your work

1 A music app charges for songs. On the graph, x is songs bought and y is total cost in dollars. Does A show a possible purchase? Explain.



ANSWER _____

2 Your game balance falls as you buy items. On the graph, x is items bought and y is dollars left. Does B show a possible balance? Explain.



ANSWER _____

CHALLENGE One step up

A student plots (0, -4) and (2, 2) for y = 3x - 4 and says these are the only solutions. Use another point to show why this is false. What does the whole line show?

WORK SPACE AND ANSWER

ANSWER KEY

Points on the Line

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Does (4, 9) lie on y = 3x - 3?	**Yes.**
2	Does (-2, 5) lie on y = -3x + 1?	**No.**
3	Find y so (3, y) lies on y = 4x - 6.	**y = 6**
4	Find x so (x, -4) lies on y = 3x + 8.	**x = -4**

PART 2 · APPLY IT

1. **Yes. A is (3, 7), and 2(3) + 1 = 7.** Read A's coordinates from the graph and substitute x = 3. The result matches A's y-value.
2. **No. B is (4, 2), but -4 + 7 = 3, not 2.** Read B's coordinates and substitute x = 4. The resulting balance differs from B's y-value.

CHALLENGE

For example, (1, -1) is another solution because 3(1) - 4 = -1. Every point on the line is a solution.

For the challenge, accept any other point that satisfies y = 3x - 4, along with a statement that the whole line represents solutions.