LESSON MAKER PRO

Find the Line

Match equations to graphs using slope and intercept.

GRADE 8 · 8.AT.D.9.b

8.AT.D.9.b "Match a linear equation in the form y = mx + b to its graph."

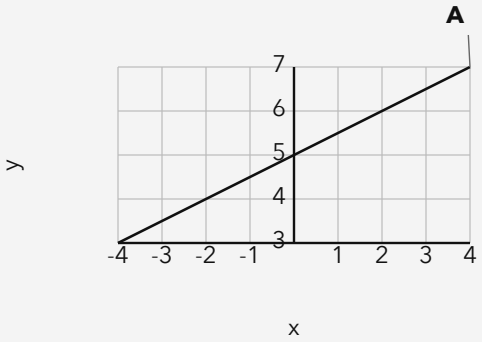
NAME _____ DATE _____

LOOK FOR TWO CLUES

In y = mx + b, b tells where the line crosses the y-axis. The slope m tells how much y changes when x increases by 1.

WORKED EXAMPLE

Which equation matches line A: y = 1/2x + 5 or y = -1/2x + 5?



1. A crosses the y-axis at (0, 5).
2. A also passes through (2, 6).
3. Slope = (6 - 5)/(2 - 0) = 1/2.

Answer: y = 1/2x + 5

PRACTICE 4 problems

1 For y = 2x + 1, give the slope and y-intercept.

ANSWER _____

2 Where does y = -3x - 2 cross the y-axis?

ANSWER _____

3 Find a point on y = 3/2x when x = 2.

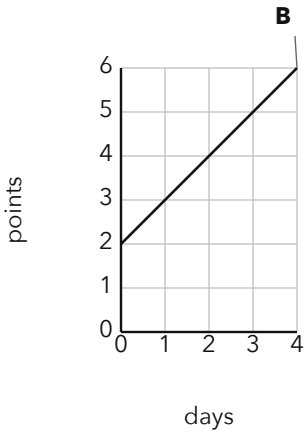
ANSWER _____

4 Find a point on y = -4x + 3 when x = 1.

ANSWER _____

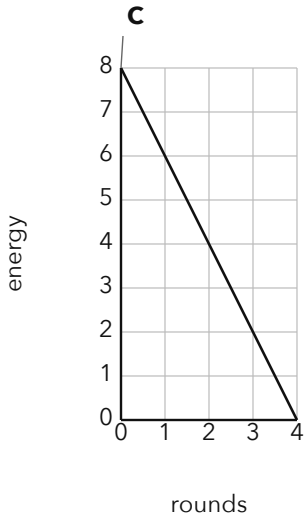
APPLY IT Show your work

1 A streaming app gives reward points each day. Which equation matches line B for total points y after x days: y = x + 2 or y = 2x + 1?



ANSWER _____

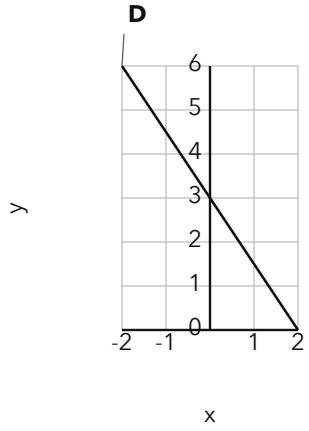
2 A game character loses energy each round. Which equation matches line C for energy y after x rounds: y = -3x + 8 or y = -2x + 8?



ANSWER _____

CHALLENGE One step up

Which equation matches line D: y = -3/2x + 3 or y = -2/3x + 3? Explain using two points on the line.



WORK SPACE AND ANSWER

ANSWER KEY

Find the Line

GRADE 8 · 8.AT.D.9.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	For y = 2x + 1, give the slope and y-intercept.	**Slope: 2; y-intercept: 1**
2	Where does y = -3x - 2 cross the y-axis?	**(0, -2)**
3	Find a point on y = 3/2x when x = 2.	**(2, 3)**
4	Find a point on y = -4x + 3 when x = 1.	**(1, -1)**

PART 2 · APPLY IT

1. **y = x + 2** The line crosses the y-axis at 2 and rises 1 point per day.
2. **y = -2x + 8** The line starts at 8 and falls 2 energy points per round.

CHALLENGE

y = -3/2x + 3. From (0, 3) to (2, 0), the slope is (0 - 3)/(2 - 0) = -3/2.

Accept equivalent descriptions of the y-intercept, such as 2 or (0, 2). For the challenge, accept any two points that show a slope of -3/2.