LESSON MAKER PRO

Choose Your Form

Write a line equation that shows what matters.

HIGH SCHOOL · MT.CORE.ALG.LIN.4.a

MT.CORE.ALG.LIN.4.a "Understand that linear equations can be represented in multiple forms and the specific features of each form by: Choosing the form strategically when writing an equation based on given information and intended use,"

NAME _____ DATE _____

PICK A USEFUL FORM

Use $y = mx + b$ when you want the y-intercept b to be visible. Use $y - y_1 = m(x - x_1)$ when a point (x_1, y_1) and the slope m are known.

WORKED EXAMPLE

The table shows two points on a line. Write an equation that shows one listed point.

x	y
4	11
6	5

1. Find the slope: (5 - 11)/(6 - 4) = -3.
2. Use the point (4, 11) in point-slope form.

Answer: y - 11 = -3(x - 4)

PRACTICE 4 problems

1 A line has slope 2 and passes through (8, 17). Write an equation that shows the given point.

ANSWER _____

2 A line has slope -1 and y-intercept 9. Write an equation that shows the y-intercept.

ANSWER _____

3 A line passes through (1, 8) and (7, 20). Write an equation that shows one given point.

ANSWER _____

4 A line has slope -2 and passes through (10, 14). Write an equation that shows its y-intercept.

ANSWER _____

APPLY IT Show your work

1 Your playlist starts with 18 songs. You add 7 songs each week. Let x be weeks and y be songs. Write an equation that shows the starting amount.

WORK SPACE

ANSWER _____

2 Your phone battery is at 82% after 1 hour of video. It drops 8 percentage points each hour. Let x be hours of video and y be battery percent. Write an equation that shows the known reading.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A channel has 45 followers after 2 weeks and 69 after 8 weeks. Let x be weeks and y be followers. Write one equation that shows the 2-week count and another that shows the starting count.

WORK SPACE AND ANSWER

ANSWER KEY

Choose Your Form

HIGH SCHOOL · MT.CORE.ALG.LIN.4.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A line has slope 2 and passes through (8, 17). Write an equation that shows the given point.	**y - 17 = 2(x - 8)**
2	A line has slope -1 and y-intercept 9. Write an equation that shows the y-intercept.	**y = -x + 9**
3	A line passes through (1, 8) and (7, 20). Write an equation that shows one given point.	**y - 8 = 2(x - 1)**
4	A line has slope -2 and passes through (10, 14). Write an equation that shows its y-intercept.	**y = -2x + 34**

PART 2 · APPLY IT

1. **y = 7x + 18** The starting amount is the y-intercept, so use slope-intercept form.
2. **y - 82 = -8(x - 1)** Use the point (1, 82) and slope -8 in point-slope form.

CHALLENGE

y - 45 = 4(x - 2); y = 4x + 37

For problems that ask to show a point, accept point-slope form using either given point. Accept equivalent equations only when the requested point, y-intercept, or starting count remains visible.