Find a Point-Slope equation for a line containing the given point and having the given slope.

1. $(4, -3)$, $m = -1$

2. $(-5, -6)$, $m = 2$

3. $(-7, 2)$, $m = 3$

4. $(3, 5)$, $m = -2$

Sep 11-1:09 PM

WWK

parallel lines — Lines in the same plane that never intersect. HAVE THE SAME SLOPE!

$y = 2x + 1$

same slope!

$y = 2x - 6$

Sep 11-1:12 PM

1

TOC 27-28 Parallel Lines

Parallel Lines · SAME SLOPE!

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TOC 27-28 Parallel Lines

Write the equation of a line that is parallel to y = -5x -7 and passes through the point (6, 2).

STEPS	EQUATION
Identify the __slope__ of the line you are given. Parallel lines have the __same__ slope!	$y = -5x - 7$ slope = -5
LABEL YOUR SLOPE AS __m__ AND YOUR ORDERED PAIR AS (__x₁__, __y₁__).	$m = -5$ $(\underset{x_1}{6}, \underset{y_1}{2})$
Plug in your slope and point into point-slope form, which is $y - y_1 = m(x - x_1)$	$y - y_1 = m(x - x_1)$ $y - 2 = -5(x - 6)$
Distribute the __slope__.	$y - 2 = -5x + 30$ $+2 \qquad +2$
Get __y__ by itself.	$y = -5x + 32$
WRITE IN SLOPE- INTERCEPT FORM, WHICH IS __y = mx + b__	

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Ex 1 (pg 25 [27]) Write the equation of the line that is parallel to:

a) -4x + 2y = 8 through (1,1)

$+4x$

$$\boxed{y = \frac{1}{4}x + \frac{5}{2}}$$

$y - y_1 = m(x - x_1)$

$y - 1 = \frac{1}{4}(x + 6)$

$y - 1 = \frac{1}{4}x + \frac{3}{2}$

b) y = -3x - 6 through (2,0)

$y - y_1 = m(x - x_1)$ $\quad x_1 \ y_1$

$y - 0 = -3(x - 2)$

$$\boxed{y = -3x + 6}$$

c) x - 4y = 16 through (-6, 1)

$-x \qquad -x$

$$\frac{-4y}{-4} = \frac{-x}{-4} + \frac{16}{-4}$$

$$y = \boxed{\frac{1}{4}}x - 4$$

d) y = 2/3x through (6, 3)

$y - y_1 = m(x - x_1)$ $\quad x_1 \ y_1$

$y - 3 = \frac{2}{3}(x - 6)$

$y - 3 = \frac{2}{3}x - 4$

$$y = \frac{2}{3}x - 1$$

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Homework

Find an equation of the line that passes through each given point and is parallel to the line with the given equation.

15. $(4, 2)$; $y = 2x - 4$

16. $(3, 1)$; $y = \frac{1}{3}x + 6$

17. $(\frac{1}{2}, \frac{1}{3})$; $x + 2y = 5$
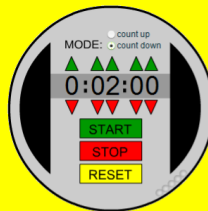
18. $(0, 0)$; $3x - y = 4$

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3

Find the equation of a line passing through the given point and parallel to the given equation. Write your answer in slope-intercept form.

1) (-1 , -1) and -2x + 3y = 21	2) (-3 , -2) and $y = \frac{3}{2}x + 3$

Sep 14-8:12 AM

S   y = -x

O   y = 1/3x - 2/3

T   y = -5x - 1

S   y = 3/4x + 3

A   y = 7/3x + 4

E   y = -3/4x + 5

R   y = 5/3x

O   y = -4x - 3

U   y = -x + 2

Y   y = 7x - 5

H   y = 4x - 1

T   y = -6/5x - 3

R   y = 1/3x - 2

T   y = 9/7x + 1

Q   y = 13/11x + 12/11

G   y = 3/2x + 8

MODE: count up count down

0:02:00

START
STOP
RESET

Sep 15-8:12 AM

4

Why don't plants
like the
distance formula?

___ ___ ___ ___
20 6 17 9

___ ___ ___
1 17 5
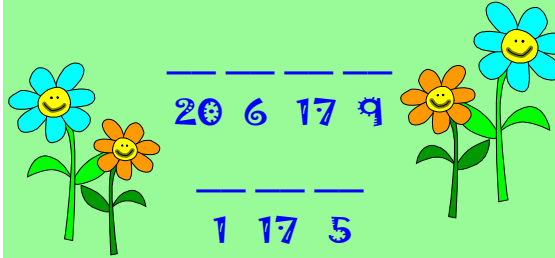
___ ___ ___ ___ ___ ___
19 2 10 18 12 17

___ ___ ___ ___ ___!!
4 21 11 3 22

Sep 15-7:56 AM