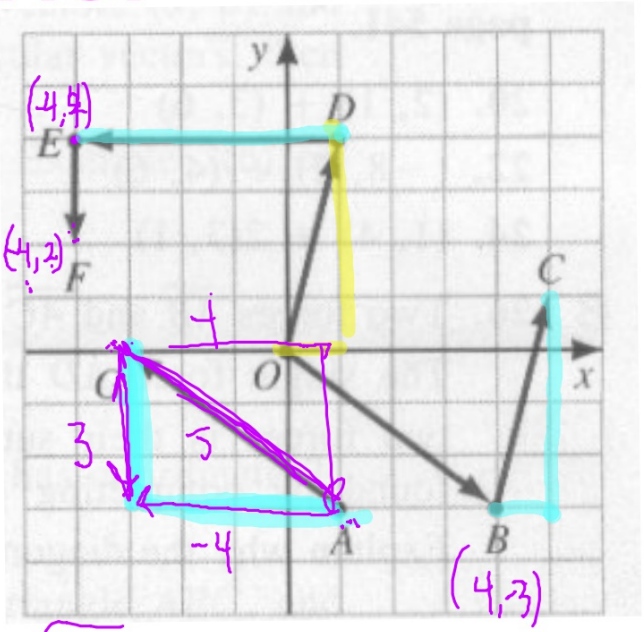
P541 CE #1-2 WARMUP

xercises 1–4 refer to the figure at the right.

1. Name each vector as an ordered pair.
   a. $\overrightarrow{OB}$ (4, −3) b. $\overrightarrow{OD}$ c. $\overrightarrow{DE}$
   d. $\overrightarrow{EF}$ e. $\overrightarrow{BC}$ f. $\overrightarrow{AG}$
2. Find the magnitude of each vector in Exercise 1.

(0, −2)



A (3, 13) B (6, −5)

−4 ≠ 4 2 − 4

0, −2

$\sqrt{(-4+3)^2}$

$\sqrt{(4+3)^2}$

SECTION 13.7:
WRITING LINEAR EQUATIONS

$y = mx + b$

slope intercept form

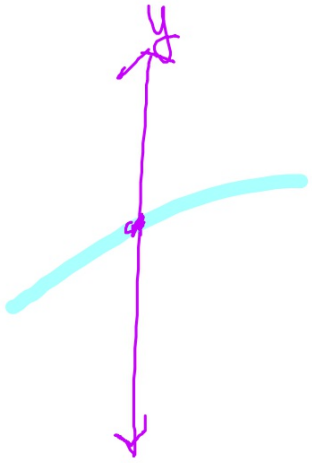
Standards:

REMEMBER

Slope intercept formula: $y = mx + b$

m = slope

b = y-intercept



EXAMPLE 1

Write the equation of the line in slope-intercept form.

a)

slope = 4 m

y intercept = 3 b

$y = mx + b$

Substitute

$y = 4x + 3$

b)

slope = $-\frac{7}{2}$

y intercept = 4

EXAMPLE 1

Write the equation of the line in slope-intercept form.

a) **Slope = 4; y-intercept = 3**

Answer

EXAMPLE 1

Write the equation of the line in slope-intercept form.

b) Slope = -7/2; y-intercept = 4

Answer

EXAMPLE 1

Write the equation of the line in slope-intercept form.

c) Slope = -8/7; y-intercept = -5

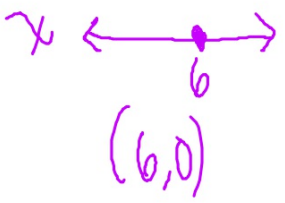
y = -8/7x -5

Answer

EXAMPLE 1

Write the equation of the line in slope-intercept form.

d) x-int = 6; y-intercept = 3



$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{3-0}{0-6} = \frac{3}{-6}$$

$$-\frac{1}{2}$$

y = -1/2x + 3

Answer

EXAMPLE 1

Write the equation of the line in slope-intercept form.

e) x-int = -4; y-intercept = 2

(-4,0)

(0,2)

$$m = \frac{2-0}{0-(-4)} = \frac{2}{4} = \boxed{\frac{1}{2}}$$

Answer $y = 1/2x + 2$

EXAMPLE 1

Write the equation of the line in slope-intercept form.

a) x-int = -3; y-intercept = -7

Answer

$y = -7/3\,x - 7$

POINT-SLOPE FORM

An equation of the line through the point (x_1, y_1) and has slope m is:

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

EXAMPLE 2

Write the equation of the line in slope-intercept form.

a) $(3, 4)$; slope = 2

x_1 y_1 m

$y = mx + b$

$4 = (2)(3) + b$

$4 = 6 + b$

$-6 \quad -6$

$-2 = b$

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

$y - 4 = 2(x - 3)$

$y - 4 = 2x - 6$

$+4 \quad +4$

$y = 2x - 2$

Answer

EXAMPLE 2

Write the equation of the line in slope-intercept form.

b) (7, 1); slope = -5

$y - 1 = -5(x - 7)$

$y - 1 = -5x + 35$

$+1 \qquad +1$

$y = -5x + 36$

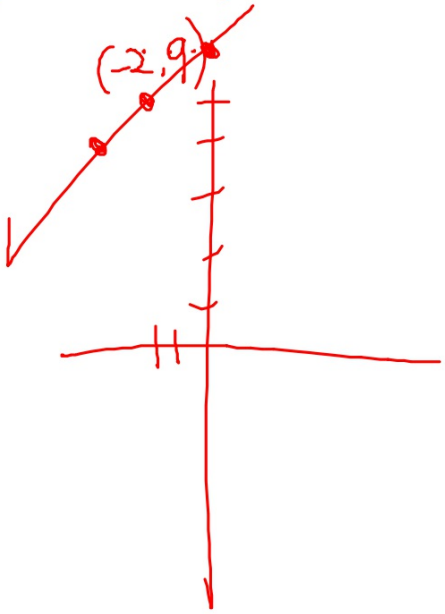
y = - 5x + 36

Answer

EXAMPLE 2

Write the equation of the line in slope-intercept form.

c) (-2,9); slope = 1/2



y = 1/2 x + 10

Answer

EXAMPLE 2

Write the equation of the line in slope-intercept form.

d) (-9, 4); slope = -5/2

$y = -\frac{5}{2}x - \frac{37}{2}$

Answer

EXAMPLE 2

Write the equation of the line in slope-intercept form.

e) line passes through (3, 3) and (5, 7)

Find slope $\frac{y_2 - y_1}{x_2 - x_1}$ $\frac{7-3}{5-3} = \frac{4}{2} = \boxed{2}$

Choose a point

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

$y - 3 = 2x - 6$

$+3 \quad +3$

Answer **y = 2x - 3**

EXAMPLE 2

Write the equation of the line in slope-intercept form.

e) line passes through (-2, -9) and (4, 5)

$y = 7/3\ x - 13/3$

Answer

HOMEWORK

Assignment #13.7a

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  (all answers in slope-int form)

Fri June 3rd - Chapter 13 Quiz

Tues June 7th - Chapter 13 Test

Page 555 #1-20
Write all answers in in Slope intercept form

Give an equation of each line described. Use the form specified by your teacher.

	1.	2.	3.	4.	5.	6.
slope	2	-3	$\frac{1}{2}$	$\frac{3}{4}$	$-\frac{7}{5}$	$-\frac{3}{2}$
***y*-intercept**	5	6	-8	-9	8	-7

	7.	8.	9.	10.
***x*-intercept**	8	9	-8	-5
***y*-intercept**	2	-3	4	-2

	11.	12.	13.	14.	15.	16.
point	(1, 2)	(3, 8)	$(-3, 5)$	$(6, -6)$	$(-4, 0)$	$(-10, 3)$
slope	5	4	$\frac{1}{3}$	$-\frac{2}{3}$	$-\frac{1}{2}$	$-\frac{2}{5}$

17. line through (1, 1) and (4, 7)

18. line through $(-1, -3)$ and (2, 1)

19. line through $(-3, 1)$ and (3, 3)

20. line through $(-2, -1)$ and $(-6, -5)$