

3.5 Equations of Lines in the Coordinate Plane

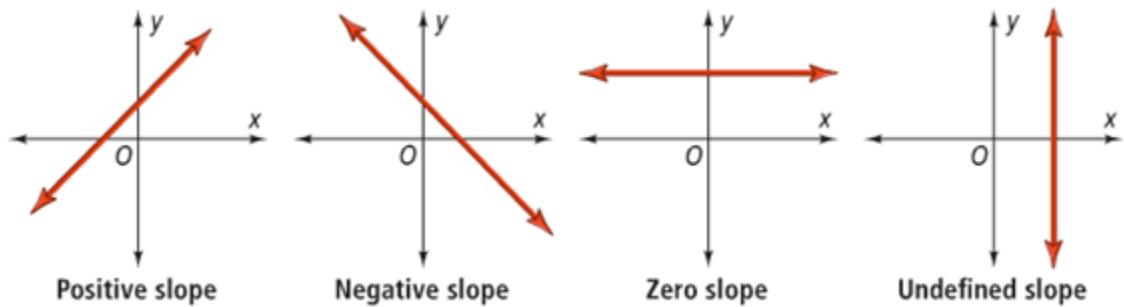
Slope =

*need more help on slope?
Go to section 5.3 on the
Algebra site

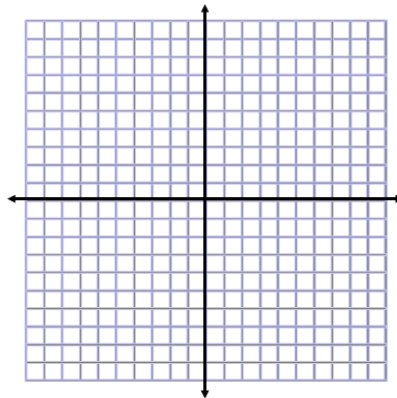
Ex:

Slope-Intercept Form:

Types of Slope



Graph:



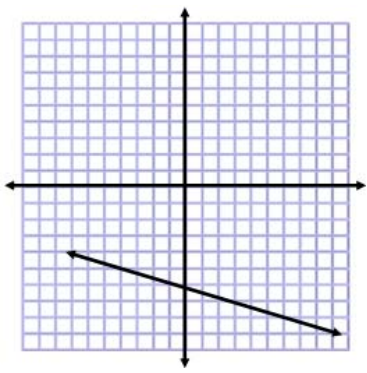
*If you need more help
graphing go to section 5.4
on the Algebra site

Writing Equations of Lines in Slope-Intercept Form

Write the equation of the line with slope of 5 and y-intercept of -3.

*If you need more help
writing equations of lines
go to section 6.2
on the Algebra site

Write the equation of the line through the point (-3, 6) with the slope -2.

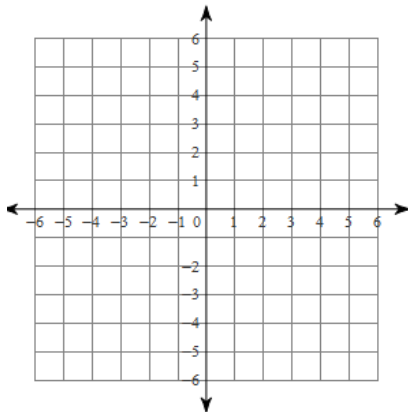


Through (-3,1) and (4, 8)

Try these:

1) Graph

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

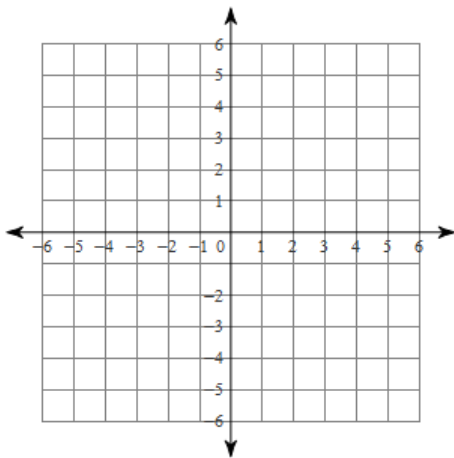


2) Write the equation of the line through (4,1) and (0,4).

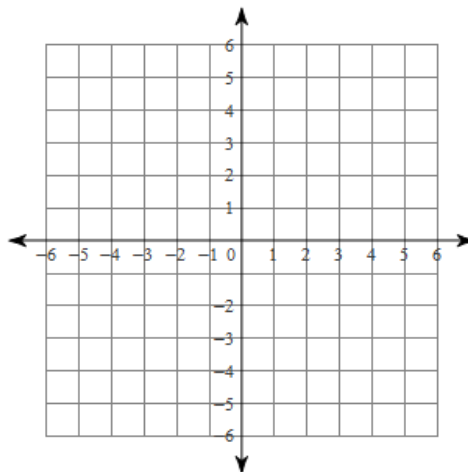
Summary:

3.5 Practice Problems

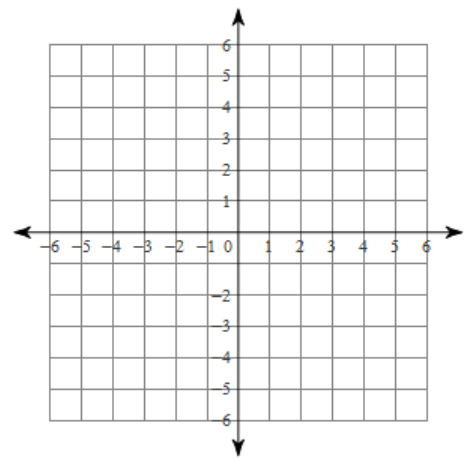
1) $y = \frac{3}{5}x - 2$



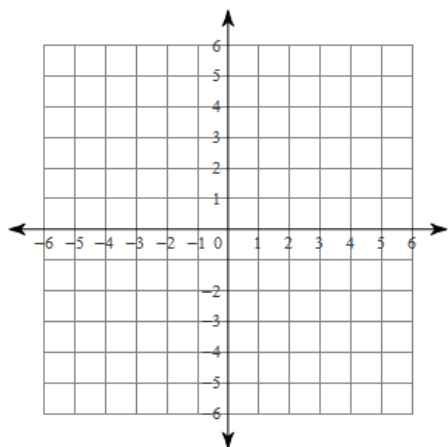
2) $y = -7x + 5$



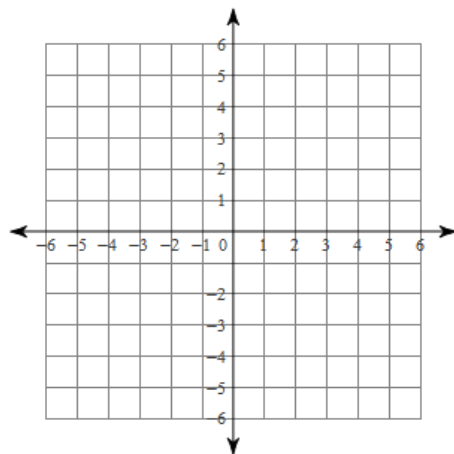
3) $y = \frac{3}{4}x$



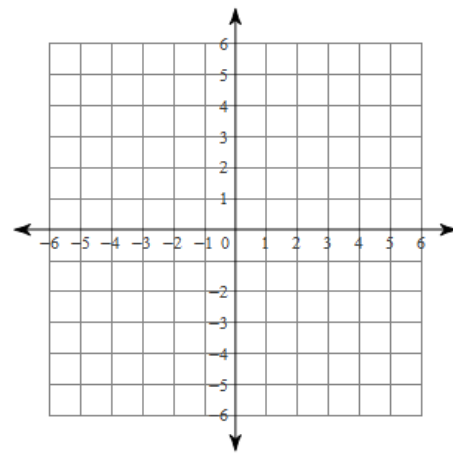
4) $y = -\frac{2}{3}x - 1$



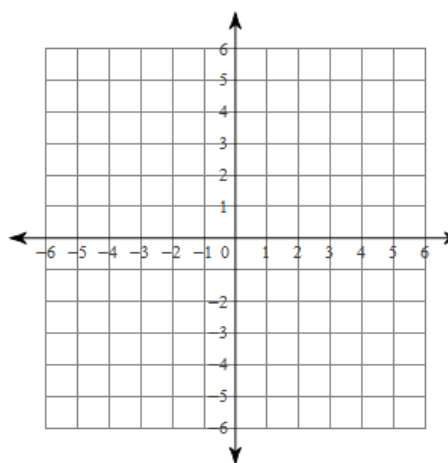
5) $y = -x - 1$



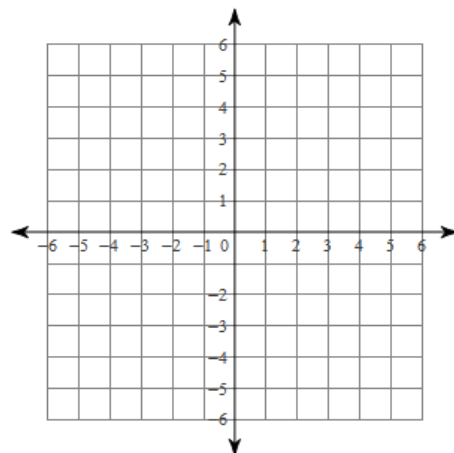
6) $y = -2x + 4$



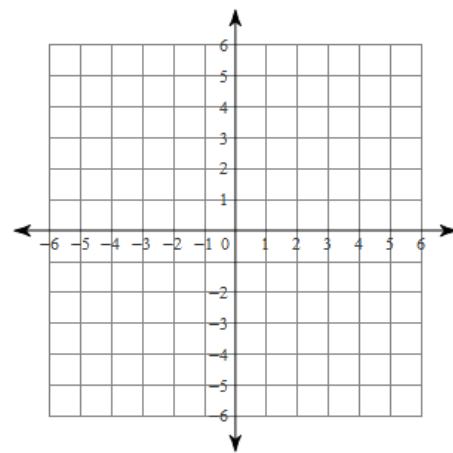
7) $y = -\frac{1}{2}x - 1$



8) $x = 1$



9) $y = 2$



Directions: Write the slope-intercept form of the equation with the given information.

10) Slope = $\frac{7}{3}$, y-intercept = -3

11) through: $(0, -1)$, slope = $\frac{1}{2}$

12) through: $(4, 3)$, slope = 2

13) through: $(3, 4)$ and $(5, -2)$

14) through: (3, 3) and (2, -4)

15) through: (-2, 3) and (0, 2)

Algebra Review

Solve: $-24 = 8 - 4k$

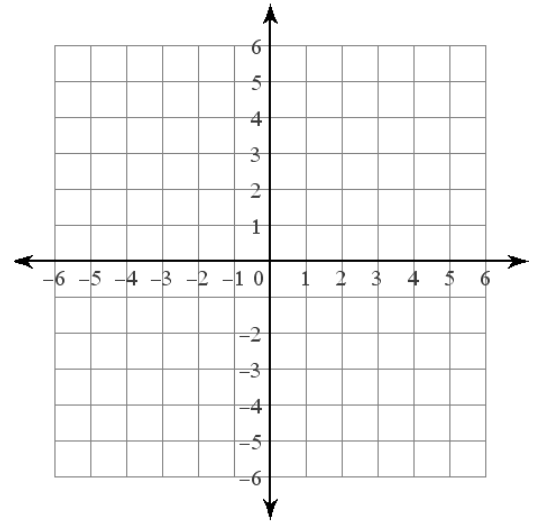
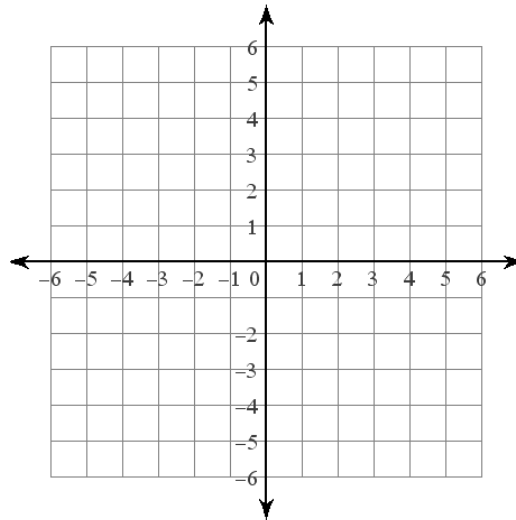
Solve: $12j + 15 = -13j - 35$

Multiply: $-5g(5g - 7)$

Factor: $36h^5 + 27h^4$

Graph: $y = \frac{1}{4}x - 3$

Graph: $y = -x$

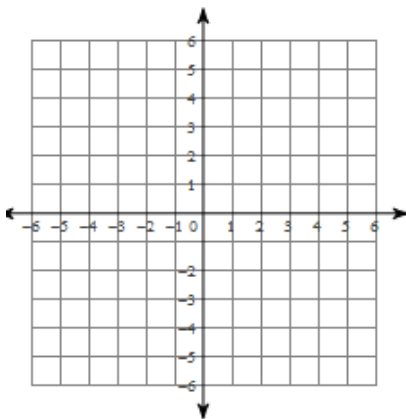


3.5 APPLICATION and EXTENSION

1) Directions: Graph the line.

$$y = -\frac{1}{5}x$$

2) Directions: Write the equation of the line through (1,1) and (3, -5)



3) Mr. Kelly is trying to make some cash for his favorite hobby, collecting Barbie dolls. After one week he still owes his wife one dollar but after three weeks he has now five dollars.

a) What's Mr. Kelly's slope (rate of change) for this situation?

b) What's Mr. Kelly's y-intercept (initial value) for this situation?

c) Write an equation of the line for the given situation. Graph the line.

d) How much money would Mr. Kelly have after 2 months?

4) Mr. Brust is saving money to buy Ken Dolls. After two weeks he has one dollar. After four weeks he now has 8 dollars.

a) What's Mr. Brust's slope (rate of change) for this situation?

b) What's Mr. Brust's y-intercept (initial value) for this situation?

c) Write an equation of the line for the given situation. Graph the line.

d) How much money would Mr. Brust have after 2 months?

e) Will Mr. Brust and Mr. Kelly ever have the same amount of money? If so, when?

f) PROVE your conclusion in letter e.

Given: Mr. Kelly's line from 3c: _____

Mr. Brust's line from 4c: _____

Prove: They will have the same money after _____ weeks.

