$4\left(y = \frac{-3}{4}x - 3\right)$

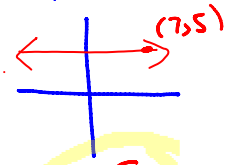
$4y = -3x - 12$

$3x + 4y + 12 = 0$ ✓

converting to general form

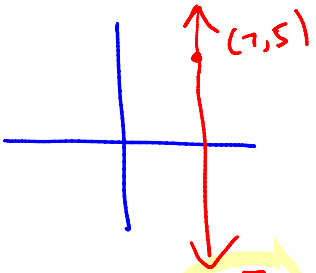
p 392 #10

a) through (7,5) parallel to x-axis



$y = 5$ or $y - 5 = 0$

b) perp to x-axis



$x = 7$ or $x - 7 = 0$

11. Slope of R(4,3) and S(1,5) $= \frac{5-3}{1-4} = \frac{2}{-3}$

P(n,4) Q(1,-2)

parallel

$\frac{-2-4}{1-n} = \frac{-2}{3}$

$\frac{-6}{1-n} = \frac{-2}{3}$

$-2(1-n) = -18$

$-2 + 2n = -18$ (+2)

$2n = -16$

$n = -8$

perp

$\frac{-2-4}{1-n} = \frac{3}{2}$

$\frac{-6}{1-n} = \frac{3}{2}$

$3(1-n) = -12$

$3 - 3n = -12$ (-3)

$-3n = -15$

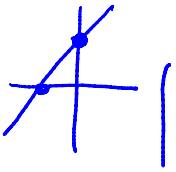
$n = 5$

Slope-intercept form $y = mx + b$

1) Easy to write equation when know slope, y-int

1) Easy to write equation when know slope, y-int
2) Easy to graph. (plot y-int, count slope)
3) Applications.

General Form $Ax+By+C=0$ ← no fractions, Ax term positive



1) Converting between forms
2) intercepts (x | y ; 0 | y-int ; x-int | 0)
3) Graph - by converting into $y=mx+b$
   - using intercepts
4) Applications

Slope-point form $y-y_1=m(x-x_1)$ ← used to find the equation of a line

1) Given slope and a point, find equation
2) Given two points. Find equation

Parallel and perpendicular lines

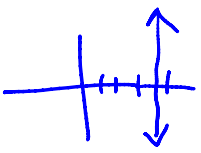
1) Find equation given .... parallel to, perpto (tells you slope)
2) find "n" given parallel/per.

$\frac{1}{3}=\frac{n}{9}$ $\quad\frac{n}{9}=\frac{-3}{1}$

$n=-27$

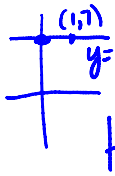
How to ~~graph~~ a line

$2x-7=0$
$\frac{2x}{2}=\frac{7}{2}$
$x=3.5$



Special cases

Vertical lines: $\{x=k,\ x-k=0\}$ with slope undefined



Horizontal lines: $\{y=k,\ y-k=0\}$ with slope Zero

(1,7)

→ Work on practice Test on page 399

(1,1)

$x=3$

→ Work on practice Test on page 399

Go to Chapter 7 review on page 396 and do questions that you struggled on in your practice test

* Suggestions #5, 6, 9, 11, 12, 14, 15