

### 3.5b Eqs of lines

\* Graphing using x & y intercepts  
||  $\perp$  slopes

Write an equation for line through (2,3)  $\perp$  to  $y = -2x + 2$

1<sup>st</sup> - Find slope we want, using  $y = -2x + 2$

$m = -2$  ... slope we want is  $\perp$ , so is  $(\frac{1}{2})$  (opp recip of -2)

2<sup>nd</sup> - Plug point into  $y = \frac{1}{2}x + b$

$$3 = \frac{1}{2}(2) + b$$

$$3 = 1 + b \quad \text{so } b = 2$$

Line:  $y = \frac{1}{2}x + 2$

Graph  $3x + 4y = 12$

\* Is in standard form, so can find the intercepts.

1<sup>st</sup> - For the x-int, let  $y = 0$   
(eliminate the y)

$$3x + 4y = 12$$

$$3x + 4(0) = 12$$

$$3x = 12$$

$$x = 4$$

↑  
Cross x-axis @ 4

For y-int, let  $x = 0$   
(eliminate the x)

$$3x + 4y = 12$$

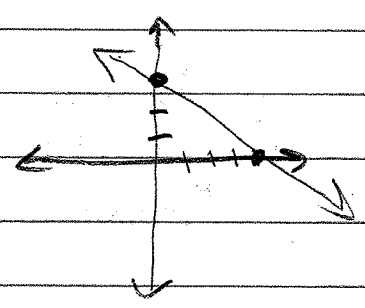
$$3(0) + 4y = 12$$

$$4y = 12$$

$$y = 3$$

↙  
Cross y-axis at 3

2<sup>nd</sup> - Plot the intercepts  
& connect



p184: 23, 30, 31, 37-39, 36, 45.