

Answers to April 10 sheet

$$1. \begin{matrix} (-2, 8) & (5, -1) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-1 - 8}{5 - (-2)} = -\frac{9}{7}$$

$$2. y = -4x - 3$$

$\uparrow$                      $\uparrow$   
 slope                y-int

New line: y-int of -4  
 perpendicular slope  $\Rightarrow \frac{1}{4}$

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

$$3. \begin{matrix} A(-3, 4) & B(-1, 7) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

$$y = mx + b$$

$$\text{slope} \Rightarrow \frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - 4}{-1 - (-3)} = \frac{3}{2}$$

$$y = \frac{3}{2}x + b$$

Use either point as (x, y)

$$A(-3, 4)$$

$x$     $y$

$$4 = \frac{3}{2}(-3) + b$$

$$4 = -\frac{9}{2} + b$$

$$\frac{4}{1} + \frac{9}{2} = b$$

$$\frac{8}{2} + \frac{9}{2} = b$$

$$\frac{17}{2} = b$$

ans:

$$y = \frac{3}{2}x + \frac{17}{2}$$

b) slope point form  
 $y - y_1 = m(x - x_1)$

$$\text{slope} = \frac{3}{2} \quad A(-3, 4)$$

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

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

$$a) \text{ slope} \Rightarrow -\frac{1}{2}$$

$$b) \text{ point } (3, -4)$$

$$c) y = mx + b$$

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

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

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

$$y = -\frac{1}{2}x + \frac{3}{2} - \frac{8}{2}$$

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

$$d) y\text{-int} : -\frac{5}{2}$$

$$5. (-2, 1) \text{ parallel slope} = \frac{3}{4}$$

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

$$6. (6, -4) \text{ perpendicular to } y = \frac{-5}{6}x + 1$$

$$y+4 = \frac{6}{5}(x-6)$$

$$\rightarrow \frac{6}{5}$$

$$7) y = mx + b$$

$$a) y-2 = \frac{1}{2}(x+8)$$

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

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

$$y = \frac{1}{2}x + 6$$

$$b) y = -\frac{3}{4}x - \frac{7}{4}$$

$$c) y = -2x + 3$$

April 12 sheet.

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