1 For each of the following, if possible, find the slope, the y-intercept and the x-intercept

1.1 $y = 4x - 6$

Slope

$$m = 4$$

y-intercept

$$c = -6$$

x-intercept

$$y = 4x - 6$$
$$0 = 4x - 6$$
$$4x = 6$$
$$x = \frac{6}{4}$$
$$x = 1.5$$

1.2 $3x + 5y - 9 = 0$

Writing equation in the form $y = mx + c$:

$$y = -\frac{3}{5}x + \frac{9}{5}$$
$$y = -0.6x + 1.8$$

Slope

$$m = -0.6$$

y-intercept

$$c = 1.8$$

x-intercept

$$y = -0.6x + 1.8$$
$$0 = -0.6x + 1.8$$
$$-0.6x = -1.8$$
$$x = \frac{1.8}{0.6}$$
$$x = 1.125$$

1.3 $y = 3x$

Writing equation in the form $y = mx + c$:

$$y = 3x + 0$$

<u>Slope</u>

$$m = 3$$

<u>y-intercept</u>

$$c = 0$$

<u>x-intercept</u>

$$y = 3x + 0$$
$$0 = 3x + 0$$
$$3x = 0$$
$$x = 0$$

1.4 $y - 7 = 3(x - 4)$

Writing equation in the form $y = mx + c$:

$$y - 7 = 3(x - 4)$$
$$y - 7 = 3x - 12$$
$$y = 3x - 12 + 7$$
$$y = 3x - 5$$

<u>Slope</u>

$$m = 3$$

<u>y-intercept</u>

$$c = -5$$

<u>x-intercept</u>

$$y = 3x - 5$$
$$0 = 3x - 5$$
$$3x = 5$$
$$x = \frac{5}{3}$$
$$= 1.67$$

1.5 $y + 4 = 7$

Writing equation in the form $y = mx + c$:

$$y + 4 = 7$$
$$y = 3$$

<u>Slope</u>
Probably

$$m = 0$$

$$c = 7$$

x-intercept

$$impossible$$

1.6 $y = 3x$

Writing equation in the form $y = mx + c$:

$$y = 3x$$
$$y = 3x + 0$$

Slope

$$m = 3$$

y-intercept

$$c = 0$$

x-intercept

$$y = 3x$$
$$3x = 0$$
$$x = \frac{0}{3}$$
$$x = 0$$

1.7 $6y - 24 = 0$

writing equation in the form $y = mx + c$:

$$6y - 24 = 0$$
$$6y = 24$$
$$y = \frac{24}{6}$$
$$y = 4$$

slope
  probably

$$impossible$$

y-intercept

$$c = 4$$

x-intercept

$$impossible$$

3

1.8 $2x = 5 - 3y$

writing equation in the form $y = mx + c$:

$$2x = 5 - 3y$$
$$3y = -2x + 5$$
$$y = -\frac{2}{3}x + \frac{5}{3}$$
$$y = -0.67x + 1.67$$

slope

$$m = -0.67$$

y-intercept

$$c = 1.67$$

x-intercept

$$2x = 5 - 3y$$
$$2x = 5 - 3(0)$$
$$2x = 5$$
$$x = \frac{5}{3}$$
$$x = 1.67$$

1.9 $-\frac{x}{2} + \frac{2y}{3} = -4\frac{3}{3}$

writing equation in the form $y = mx + c$:

$$-\frac{x}{2} + \frac{2y}{3} = -4\frac{3}{3}$$
$$-\frac{x}{2} + \frac{2y}{3} = -5$$
$$-\frac{x}{2} + \frac{2y}{3} + \frac{5}{1} = 0$$
$$\frac{-3x + 4y + 30}{6} = 0$$
$$-3x + 4y + 30 = 0$$
$$4y = 3x - 30$$
$$y = \frac{3}{4}x - \frac{30}{4}$$
$$y = 0.75x - 7.5$$

slope

$$m = 0.75$$

$$c = -7.5$$

<u>x-intercept</u>

$$y = 0.75x - 7.5$$
$$0 = 0.75x - 7.5$$
$$0.75x = 7.5$$
$$x = \frac{7.5}{0.75}$$
$$x = 10$$

1.10 $y = \frac{1}{300}x + 8$

writing equation in the form $y = mx + c$:

$$y = \frac{1}{300}x + 8$$
$$y = 0.003x + 8$$

<u>slope</u>

$$m = 0.003$$

<u>y-intercept</u>

$$c = 8$$

<u>x-intercept</u>

$$y = 0.003x + 8$$
$$0 = 0.003x + 8$$
$$0.003x = -8$$
$$x = \frac{-8}{0.003}$$
$$x = -2666.67$$