Name: SOLUTIONS.
Stu#:

(1) [3] Determine the equation of the line of slope $-2/3$ through the point $(1, -1)$.

Here $m = -\frac{2}{3}$, $(x_1, y_1) = (1, -1)$.

using $y - y_1 = m(x - x_1)$,

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

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

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

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

(2) [4] Determine the slope and y-intercept of the line $2x - 3y = 5$.

$2x - 3y = 5$

$-3y = -2x + 5$

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

$\therefore$ slope $m = \frac{2}{3}$, y-intercept $(0, -\frac{5}{3})$

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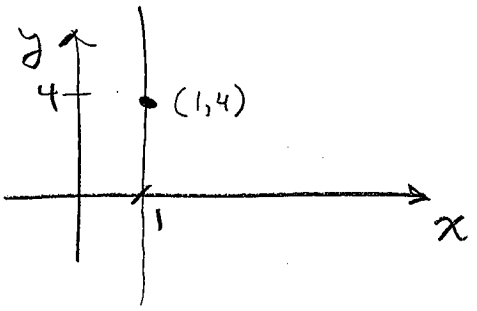
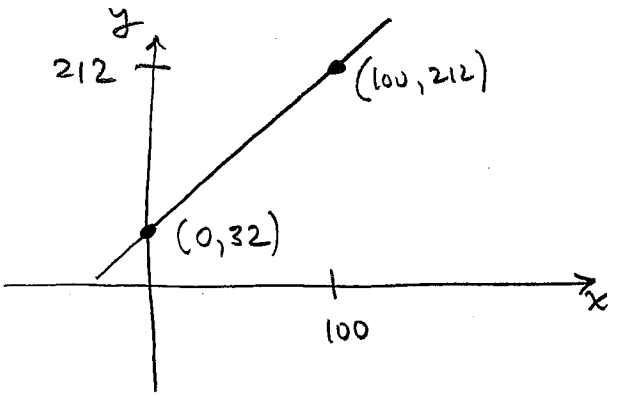
(3) [3] Determine the equation of the line through $(1, 4)$ with slope undefined.



$\therefore$ $\boxed{x = 1}$

(4) [5] Temperature can be measured using degrees Celsius ($°C$) or degrees Fahrenheit ($°F$), and the relationship between the two is linear. Given that 0 $°C$ corresponds to 32 $°F$ and 100 $°C$ corresponds to 212 $°F$, determine an equation relating $°C$ and $°F$.

Let x = temperature (°C)
y = temperature (°F).



$$m = \frac{212-32}{100-0} = \frac{180}{100} = \frac{9}{5}.$$

$\therefore$ $y - 32 = \frac{9}{5}(x - 0)$

$$\boxed{y = \frac{9}{5}x + 32}$$