Mathematics 101 Worksheet 2.3, 2.4

<u>Problems</u>

1)Write an equation of the line in slope-intercept form or standard form that
a) has slope $\frac{1}{9}$ and y-intercept $(0, 6)$.
b) has slope $\frac{1}{9}$ and x-intercept $(3, 0)$.
c) passes through (6,12) and (4,10).
d) passes through the point (3,2) and is parallel to the line with a slope of $\frac{-3}{4}$.
e) passes through the point (0,-3) and is parallel to the line $4x + 3y = -1$.
f) passes through the point (6,-2) and is perpendicular to the line $y = \frac{-1}{3}x+2$.

2) Ally loves the beach and decides to spend the summer selling various ice cream products on the beach. From her accounting course, she knows that her total cost is calculated as

$$\text{Total Cost} = \text{fixed cost} + \text{variable cost}$$

She estimates that her fixed cost for the summer season is \$20 per day. She also knows that each ice cream product costs her \$0.25 from her distributor.
a) Write a relationship for the daily cost y in terms of the number of ice cream products sold per day x.
b) Graph the equation from part (a) by letting the horizontal axis represent the number of ice cream products sold per day and the vertical axis represent the daily cost.
c) What does the y-intercept represent in the context of this problem?
d) What is her cost if she sells 450 ice cream products?
e) What is the slope of the line?
f) What does the slope of the line represent in the context of this problem?