Quiz 1   *Key*

Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.

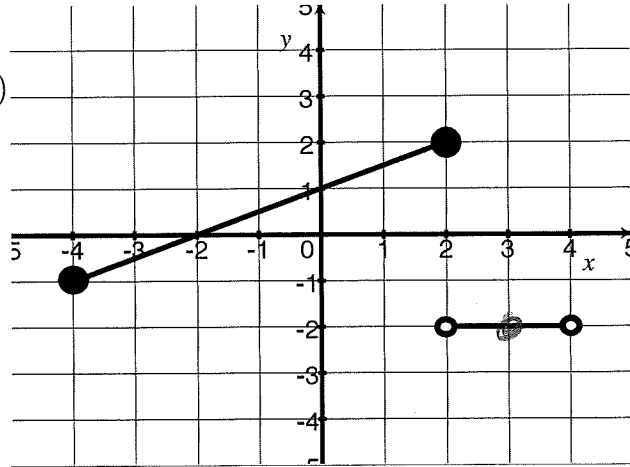1. Let f be the graph below and to the right.

   (a) [1] (WebHW3 #16) Find $f(3)$

   -2

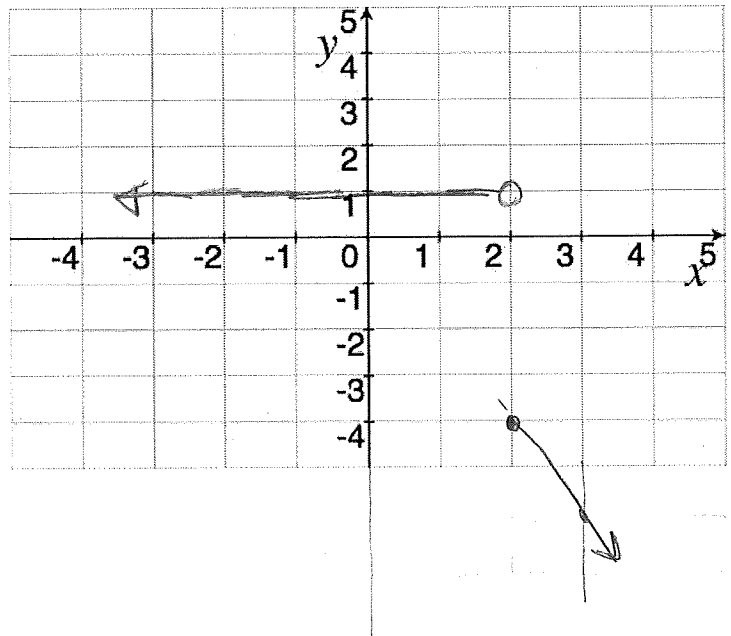   (b) [1] (§1.1 #44) What is the y-intercept?

   1

   or $(0,1)$

2. [2] (GraphWks #4 & WebHW3 #19) Plot two points that are on the graph of

$$\begin{cases} 1 & \text{if } x < 2 \\ -2x & \text{if } 2 \le x \end{cases}$$

any two points on the graph →

(+1) for each point.

1

3. [2] (WebHW1 #7) Add and subtract as indicated $\dfrac{-x}{x+22} - \dfrac{x+22}{x}$

start (+.5)

common den (+1)
negative signs (+.5)
legal simplify (+1)

$$\frac{x}{x} \quad \frac{-x}{x+22} - \frac{x+22}{x} \quad \frac{x+22}{x+22}$$

$$\frac{-x^2 - (x+22)(x+22)}{x(x+22)} \quad \text{or} \quad \frac{-x^2 - (x+22)^2}{x(x+22)} \quad \text{or} \quad \frac{-x^2 - x^2 - 44x - 22^2}{x(x+22)}$$

4. [3] (FractionWks#2) You have 8 oz of mocha that is 25% espresso sitting in a 16 oz cup. Write a rational expression in x whose values give the percentage (in decimal form) of espresso in the cup when x oz of espresso are added to it.

start with: $8_{\text{mix oz}} \cdot \dfrac{.25 \text{ espresso oz}}{\text{mix oz}} = 2 \text{ espresso oz}$ (+1)

(+.5)   (+.5)   (+.5)

$\text{percentage of espresso} = \dfrac{\text{espresso oz}}{\text{mix oz}} = \dfrac{\text{original espresso + new}}{\text{original mix + new}}$

$$= \frac{2+x}{8+x} \quad \begin{array}{l}\text{espresso oz} \\ \text{mix oz}\end{array}$$

(+.5)

just write the answer (+2)
write the answer w/ contradictory work (1.5)

2