

2. [10 points] Jada has a new job, selling candy to the elves. Below is a chart that shows how much money,  $D$ , in dollars, Jada has in her cash register  $h$  hours after she starts selling candy.

$h$	3	5	6
$D$	16	25	?

- a. [2 points] What assumption needs to be made about the situation in order for it to be reasonable to model  $D$  using a **linear** function of  $h$ ?
- b. [1 point] If  $D$  can be modeled as a linear function of  $h$ , how much money, in dollars, will Jada have after 6 hours?

**Answer:** \_\_\_\_\_

- c. [4 points] Find both the slope and vertical intercept of the linear function. Then, for each quantity, write a sentence interpreting that quantity in the context of the problem.

**Answer:** Slope: \_\_\_\_\_

**Interpretation:**

**Answer:** Vertical intercept: \_\_\_\_\_

**Interpretation:**

- d. [3 points] Jada is selling both chocolate bars for \$0.20 each and lollipops for \$0.05 each. Suppose that Jada makes exactly \$8 one day selling  $B$  chocolate bars and  $P$  lollipops. Let  $f$  be the function such that  $B = f(P)$  in this case. Find a formula for  $f$ .

**Answer:**  $f(P) =$  \_\_\_\_\_