8. [9 points] The owner of Sarah and Peter’s regular pizza place offers a special at dinner. When customers order a pizza, an order of breadsticks, and a large salad, they get a discount. Suppose a customer normally pays $15 for each pizza, $5 for an order of breadsticks, and $8 for a large salad.

a. [3 points] The owner has been experimenting with different discounts. When he offers a discount of $d$ dollars on the dinner special, he sells $C(d)$ specials each day. Write an expression, possibly involving $C(d)$ and $d$, for $R(d)$ the total revenue (sales in dollars, with no expenses) from dinner specials per day.

\[ R(d) = (28 - d)C(d). \]

b. [2 points] The cost of all the ingredients to make each dinner special is $8. Write an expression, possibly involving $C(d)$ and $d$, for $P(d)$, the total revenue from the dinner special minus the cost of the ingredients, when the discount on the dinner specials is $d$ dollars.

\[ P(d) = (20 - d)C(d). \]

c. [4 points] After experimenting with different discounts, the owner discovers that

\[ R(d) = \frac{1}{100}d(28 - d)(78 - d). \]

Find formulas (involving only $d$) for $C(d)$ and $P(d)$.

\[ C(d) = \frac{1}{100}d(78 - d). \]

\[ P(d) = \frac{1}{100}d(20 - d)(78 - d). \]