

Problem 0.1. I went to the Pompeii restaurant and bought the same number of salads and small pizzas. Salads cost two dollars each and pizzas cost six dollars each. I spent \$40 all together. Assume that the equation $2S + 6P = 40$ is correct. Then,

$$2S + 6P = 40.$$

Since $S = P$, I can write

$$2P + 6P = 40.$$

So

$$8P = 40.$$

The last equation says 8 pizzas is equal to \$40 so each pizza costs \$5.

What is wrong with the above reasoning? Be as detailed as possible. How would you try to help a student who made this mistake?

Problem 0.2. Here is a problem and a student's response. Is this correct? If not, where did the student go wrong?

I went to the Pompeii restaurant and bought 4 salads and two pizzas. It cost twice as much for a pizza as for a salad. I spent \$40 dollar altogether. How much do pizzas cost?

$$4S + 2P = 40$$

Since $2P = S$,

$$8P + 2P = 40$$

so

$$P = 4.$$

Pizzas cost \$4.