

How to Solve Problems Using Substitution

Let's say you go to a pet store and buy some iguanas and some budgies (parakeets) for a total cost of \$120. Each iguana cost \$40, and each budgie cost \$10. How many iguanas and budgies did you buy, if you got six new pets?

- First, create two equations: one for the total # of pets, and another for the total cost in dollars.

- Total # of pets:

You know you bought a total of six pets, and that you bought budgies and iguanas. Therefore, some number of budgies plus some number of iguanas totals six. Express this using an equation:

$$\underline{\text{Budgies} + \text{Iguanas} = 6} \quad (\text{eqn. 1})$$

- Total cost, in \$:

You know iguanas cost \$40 each and that budgies cost \$10 each. You also know the total cost is \$120. Therefore, the cost of iguanas at \$40 each plus the cost of budgies at \$10 each equalling \$120 can be represented by:

$$\underline{10B + 40I = 120} \quad (\text{eqn. 2})$$

- We now have two equations to use.

