

Buying Pets



You're given a hundred dollars and told to spend it all purchasing exactly a hundred animals at the pet store. Dogs cost \$15. Cats cost a buck, and mice are 25 cents each.

- You have to spend exactly a hundred bucks
- You have to end up with exactly a hundred animals
- You have to purchase at least one of each animal

The question is, how many of each animal do you have to purchase to equal a hundred animals purchased at exactly a hundred dollars?

After solving the problem, Scroll Down for the Solution

Solution

Trial and Error works!

Lets say you assumed 3 dogs and 30 cats. That would mean 67 mice

$$45 + 30 + 67/4 = 100$$

75 + no good! It has to be a multiple of 4

Lets try 3 dogs and 60 mice ($60/4 = 15$)

$$45 + C + 15 = 100$$

$$C = 40$$

No good! 3 dogs + 60 mice + 40 cats = 103 animals We're close!

Lets try 56 mice ($56/4 = 14$)

$$45 + C + 14 = 100$$

$$C = 41$$

It works!

$$3 \text{ dogs} + 41 \text{ cats} + 56 \text{ mice} = 100 \text{ animals}$$

$$3 \text{ dogs} = 45$$

$$41 \text{ cats} = 41$$

$$56 \text{ mice} = 14$$