

Dmitri's Problem

Dmitri has 56 biscuits left to give to his ten pets.

His dogs aren't large, but they are larger than his cats, so he decides each dog will get 6 biscuits, and each cat will get 5.

? Cool, now we know how many dogs, and how many cats, Dmitri has!

$d = \# \text{ dogs}, c = \# \text{ cats}$

$$d + c = 10$$

$$6d + 5c = 56$$

$$d = 10 - c$$

$$d + c = 10 - c$$

$$6(10 - c) + 5c = 56$$

$$60 - 6c + 5c = 56$$

$$-c = 56 - 60$$

$$-c = -4$$

$$c = 4$$

$$d + c = 10$$

$$d + 4 = 10$$

$$d = 10 - 4 = 6$$

Model #2
Algebraic

Model #1

dogs	Concrete cats	biscuits
10	0	60
9	1	59
8	2	58
7	3	57
6	4	56
5	5	55
4	6	54
3	7	53
2	8	52
1	9	51
0	10	50

Model #3
Insight

$$10 \cdot 5 = 50$$

$$56 - 50 = 6 \Rightarrow \text{dogs} \Rightarrow 4 \text{ cats}$$

