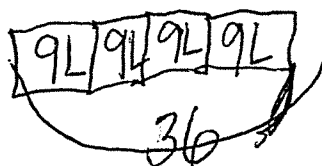Name:_____ **Module 3 Study Guide**

1. There are 36 liters of water needed to finish filling the dunk tank at the carnival. Each container holds 9 liters of water. How many containers are needed to finish filling the dunk tank? Represent the problem using multiplication and division sentences and a letter for the unknown. Solve.

$$9 \times L = 36$$
$$36 \div 9 = L$$

| 9L | 9L | 9L | 9L |

36

$L = 4$ They need 4 containers.

2. The magician uses a magic box. Every time he puts an object in, it gets multiplied. Fabrizio writes down what happens each time and tries to find a pattern. Look at his notes to the right.

   b. Use the pattern to fill in the number of bean bags.
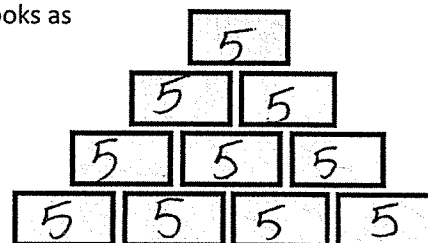
   c. What does the magic box do? Explain how you know.

   It multiplies by 8. I know because I see them counting by 8.

In	Out
2 Feathers X 8	16 Feathers
3 Marbles X 8	24 Marbles
4 Dice X 8	32 Dice
5 Wands X 8	40 Wands
6 Bean bags X 8	48 Bean bags

3. a. A shopkeeper in the bookstore arranges the boxed sets of books as shown to the right.

   If each box contains 5 books, how many books are there?

   ▪ Write an equation using a letter to represent the unknown, and then solve.
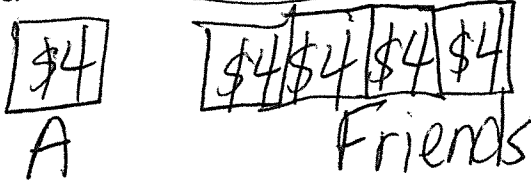   ▪ Explain how you know your answer is reasonable.

| 5 |
5	5
5	5	5
5	5	5	5

I know 10 x 5 = 50.

$5 \times 10 = 50$ books

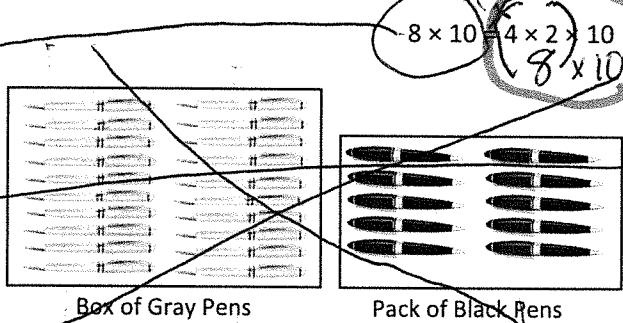$B = 50$

4. Aunt Korina and her 4 friends decide to share a cab to go to the mall. If they each spent $4, how much did the cab ride cost altogether? Write an equation using a letter to represent the unknown. Solve.

$4
A

$4 $4 $4 $4
Friends

$$4 \times 5 = K$$
$$K = \$20$$

It cost $20.

5. In the book store, Aunt Korina buys 2 boxes of pens. Each box contains 4 bundles of 10 gray pens. Her friend buys 8 packs of pens. Each pack contains 10 black pens. Explain how the equation below shows how Aunt Korina and her friend buy the **same number of pens.**

$$8 \times 10 = 4 \times 2 \times 10$$
$$8 \times 10$$

Box of Gray Pens   Pack of Black Pens

They both had 8 tens.

$$A = \begin{array}{|c c|c c|} 10 & 10 & 10 & 10 \\ 10 & 10 & 10 & 10 \end{array} = 80 \text{ pens}$$
40   40

$$F = \boxed{10}\;\boxed{10}\;\boxed{10}\;\boxed{10}\;\boxed{10}\;\boxed{10}\;\boxed{10}\;\boxed{10} = 80 \text{ pens}$$