

Name _____

Solve Multi-Step Problems Using Equations

I Can solve real-world multi-step problems using multiplication, addition, and subtraction.

Florida's B.E.S.T.

- Algebraic Reasoning 4.AR.1.1
- Number Sense & Operations 4.NSO.2.3, 4.NSO.2.1
- Mathematical Thinking & Reasoning MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1



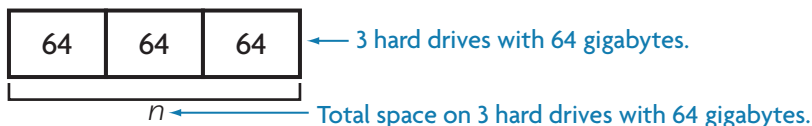
UNLOCK the Problem Real World

Chris's computer has 3 hard drives with 64 gigabytes of space each, and 2 hard drives with 16 gigabytes of space each. The files on his computer use 78 gigabytes of space. How much hard drive space does his computer have left?



Use multiple single-step equations.

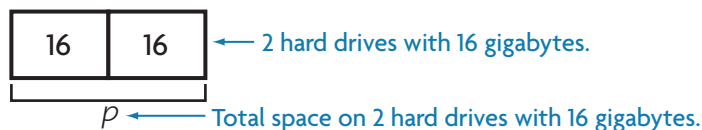
STEP 1 Find how much hard drive space is on 3 hard drives with 64 gigabytes of space each.



$$3 \times 64 = n$$

$$\underline{192} = n$$

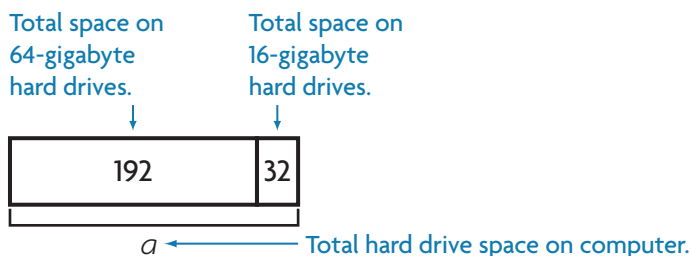
STEP 2 Find how much hard drive space is on 2 hard drives with 16 gigabytes of space.



$$2 \times 16 = p$$

$$\underline{32} = p$$

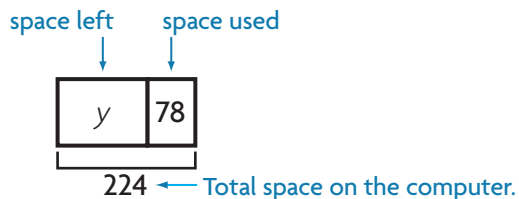
STEP 3 Find the total hard drive space on the computer.



$$192 + 32 = a$$

$$\underline{224} = a$$

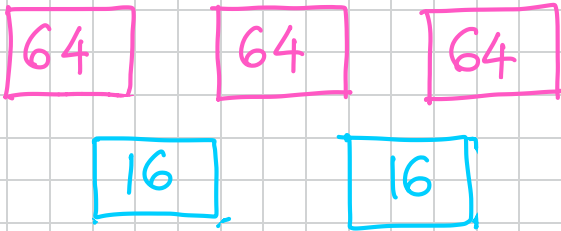
STEP 4 The files use 78 gigabytes of space. Find how much hard drive space the computer has left.



$$224 - 78 = y$$

$$\underline{146} = y$$

So, Chris has _____ gigabytes of hard drive space left on his computer.



Files use 78 GB space

$$64 \times 3 = 192$$

$$16 \times 2 = 32$$

$$192 + 32 = 224 \text{ total}$$

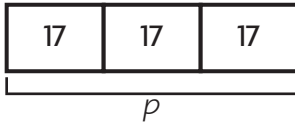
$$\text{Left} = 224 - 78 = 146 \text{ GB left}$$

Share and Show

Math Board

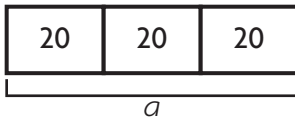


1. Carnie and Doug bake cookies to sell at a bake sale. Carnie makes 3 batches of 17 cookies each and Doug makes 3 batches of 20 cookies each. After ten minutes at the bake sale, they sold 32 cookies. How many cookies do Carnie and Doug have left to sell? **79 left**



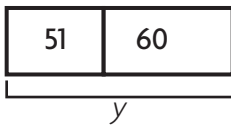
$$3 \times 17 = p; 51 = p$$

← First, multiply 3×17 . Let p represent the number of cookies Carnie makes.



$$3 \times 20 = a; 60 = a$$

← Next, multiply 3×20 . Let a represent the number of cookies Doug makes.



$$51 + 60 = y; 111 = y$$

← Then, add the two products. Let y represent the number of cookies Carnie and Doug make.

$$111 - 32 = n; 79 = n$$

← Finally, subtract to find the number of cookies Carnie and Doug have left to sell.

2. Dyani buys 3 bags of lollipops, with 12 lollipops in each bag. She also buys 4 bags of gum, with 11 pieces in each bag. How many lollipops and pieces of gum does Dyani have? **80 pieces**

3. Simba has 4 boxes with 32 marbles in each box. He has 7 boxes with 18 shells in each box. If he gets 20 marbles from a friend, how many marbles and shells does he have?

On Your Own

4. Mario drove 60 miles each day to and from work for 5 days. Then he drove 54 miles each day on Saturday and Sunday. How many miles did Mario drive during those seven days? **408 miles**

5. Keqing has 3 binders with 25 stamps in each binder. She has 5 binders with 24 baseball cards in each binder. If she gives 35 stamps to a friend, how many stamps and cards does she have left?

Math Talk

MTR 3.1 Complete tasks with mathematical fluency.

Explain why in Problem 1 you added during step 3 instead of multiplying.

① C

D

17 17 17

20 20 20

Sold = 32 cookies

$$17 \times 3 = 51$$

$$20 \times 3 = 60$$

$$51 + 60 = 111 \text{ total}$$

$$\text{left} = 111 - 32 = 79 \text{ left}$$

② 12 12 12

11 11 11 11

$$\begin{array}{l} \text{lollipops} = 12 \times 3 = 36 \\ \text{Gum} = 11 \times 4 = 44 \end{array}$$

$$36 + 44 = 80$$

④ D1 D2 D3 D4 D5

60 60 60 60 60

Sat

Sun

54

54

$$60 \times 5 = 300 \text{ (D1} \rightarrow \text{D5)}$$

$$54 \times 2 = 108 \text{ (Sat} \rightarrow \text{Sun)}$$

$$\text{total} = 300 + 108 = 408 \text{ miks}$$