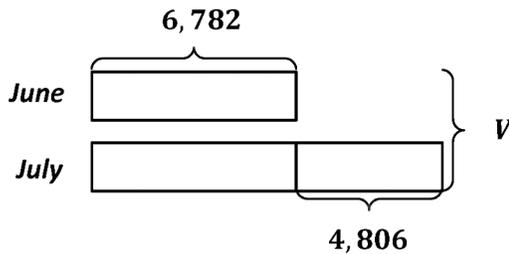


Estimate and then solve. Model the problem with a strip diagram. Explain if your answer is reasonable.

1. There were 4,806 more visitors to the zoo in the month of July than in the month of June. June had 6,782 visitors. How many visitors did the zoo have during both months?



Since the problem states the relationship between June and July, I can draw two tapes. I make July's tape longer because there were more visitors in July. I partition July's tape into two parts: one part for the number of people in June and the other part for 4,806 more visitors.

- a. About how many visitors did the zoo have during June and July?

$$7,000 + 7,000 + 5,000 = 19,000$$

The zoo had about 19,000 visitors during June and July.

To estimate the total, I round each number to the nearest thousand and add those numbers together.

- b. Exactly how many visitors did the zoo have during June and July?

$$\begin{array}{r}
 6,782 \\
 6,782 \\
 + 4,806 \\
 \hline
 18,370
 \end{array}$$

When I look at my tape diagram, I see that I don't have to solve for July to find the total. This saves me a step.

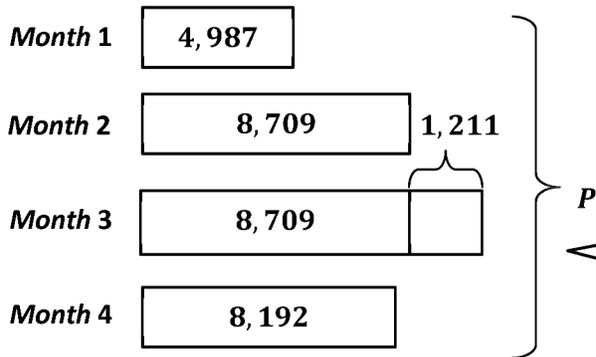
The zoo had exactly 18,370 visitors during June and July.

- c. Is your answer reasonable? Compare your estimate to the answer. Write a sentence to explain your reasoning.

Sample Response: *My answer is reasonable because my estimate of 19,000 is only about 600 more than the actual answer of 18,370. My estimate is greater than the actual answer because I rounded each addend up to the next thousand.*

2. Emma’s class spent four months collecting pennies.
- a. During Month 3, the class collected 1,211 more pennies than they did during Month 2. Find the total number of pennies collected in four months.

Month	Pennies Collected
1	4,987
2	8,709
3	
4	8,192



I draw four tapes to represent each month. Now, I can see how many pennies were collected in Month 3.

$$5,000 + 9,000 + 9,000 + 1,000 + 8,000 = 32,000$$

$$\begin{array}{r}
 4,987 \\
 8,709 \\
 8,709 \\
 1,211 \\
 + 8,192 \\
 \hline
 31,808
 \end{array}$$

I add in unit form: 5 thousands + 9 thousands + 9 thousands + 1 thousand + 8 thousands = 32 thousands. 32 thousand is an estimate of the total number of pennies collected in four months.

The total number of pennies collected in four months was 31,808.

To find the total pennies collected in the four months, I could solve for Month 3 and then add all of the months together to solve for P. Instead, I just add the value of each of the tapes together. The tape diagram shows me how to solve this in one step, not two.

- b. Is your answer reasonable? Explain.

Sample Response: My answer is reasonable. 31,808 is only about 200 less than the estimate of 32,000.

Name _____

Date _____

Estimate and then solve each problem. Model the problem with a strip diagram. Explain if your answer is reasonable.

1. There were 3,905 more hits on the school’s website in January than February. February had 9,854 hits. How many hits did the school’s website have during both months?

a. About how many hits did the website have during January and February?

b. Exactly how many hits did the website have during January and February?

c. Is your answer reasonable? Compare your estimate from (a) to your answer from (b). Write a sentence to explain your reasoning.



3. Last year on Ted's farm, his four cows produced the following number of liters of milk:

Cow	Liters of Milk Produced
Daisy	5,098
Betsy	
Mary	9,980
Buttercup	7,087

- a. Betsy produced 986 more liters of milk than Buttercup. How many liters of milk did all 4 cows produce?

- b. Is your answer reasonable? Explain.

