Prerequisite: Model Two-Step Word Problems

Study the example problem showing how to model a two-step word problem. Then solve problems 1–5.

Example

The art shop was almost out of rolls of tape. There were only 3 rolls left. The owner ordered 5 boxes with 6 rolls in each box. How many rolls of tape are there now?

\[5 \times 6 = 30\]
\[30 + 3 = 33\]

There are 33 rolls of tape now.

1. Each box of party invitations costs $6. Jenny bought 3 boxes of invitations. She paid with a $20 bill. Complete the number sentences to find how much change Jenny got.

\[3 \times \_\_\_\_\_ = \_\_\_\_\_\_\\]
\[20 - \_\_\_\_\_ = \_\_\_\_\_\]

Jenny got \_\_\_\_ in change.

2. There are 2 baskets, each holding 4 bags of bows. Each bag costs $3. Mr. Holms bought all of the bags. Complete the number sentences to find out how much he spent on bows.

\[2 \times \_\_\_\_\_ \times 3 = \_\_\_\_\_\_\]

He spent \_\_\_\_ on bows.
Solve.

3 Packages of party napkins are $4 each. Bags of party cups are $6 each. Mrs. Laurey bought 2 packages of party napkins and 1 package of party cups. How much did she spend in all?

Write number sentences, then write the solution.

*Number sentences:* ______________________________

*Solution:* She spent $ ______.

4 The gift shop sells red and white paper plates. They have 20 packs of red plates and 28 packs of white plates. All packs of plates are on 6 shelves with the same number of packs on each shelf. How many packs of plates are on each shelf?

*Show your work.*

*Solution:* There are ______ packs on each shelf.

5 Large tablecloths are $12 each. Small ones are $8 each. How many small tablecloths can you buy for the same price as two large tablecloths?

*Show your work.*

*Solution:* You can buy ______ small tablecloths.
Study the example problem showing how to solve a two-step word problem. Then solve problems 1–5.

**Example**

Students in the science club raised $210 for lab equipment. They bought 7 packs of batteries for $9 each. How much money did they have left?

\[ X \] is how much money was left.

\[
7 \times 9 + X = 210 \\
63 + X = 210 \\
210 - 63 = X \\
210 - 63 = 147
\]

They have $147 left.

1. Mrs. Horn needs 50 rulers for the art room. She has 7 packs with 4 rulers in each pack. How many more rulers does she need? Complete the number sentences to solve the problem.

\[ X \] is how many more rulers she needs.

\[
7 \times \underline{\hspace{1cm}} + X = 50 \\
\underline{\hspace{1cm}} + X = 50 \\
\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = X, \text{ and } X = \underline{\hspace{1cm}}
\]

Solution: Mrs. Horn needs ______ more rulers.

2. The principal wants to buy a banner that costs $95. Five parents each donate $6 for the banner. How much more money is needed? Complete the number sentences to solve the problem.

\[
\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} + X = 95 \\
\underline{\hspace{1cm}} + X = 95 \\
X = \underline{\hspace{1cm}}
\]

Solution: They need ______ more.
Solve.

3 A camp needs 100 students to help with the 4-year old campers. Eight students from 4 different classes have agreed to help. How many more students are needed?

*Show your work.*

Solution: ____________________________

4 The music teacher had $75. He bought 4 folk song books for $9 each. Does he have enough money to buy a music stand for $49? If not, how much more money does he need?

*Show your work.*

Solution: ____________________________

5 Mr. Berg bought 5 number puzzles and 3 word puzzles for his students. The puzzles were $7 each. Mr. Berg used a $60 gift card to pay for the puzzles. How much change did he get?

*Show your work.*

Solution: ____________________________
Estimate Solutions to Two-Step Word Problems

Study the example showing how to estimate the solution to a two-step word problem. Then solve problems 1–4.

Example

The city garden has red and pink rose bushes. There are 119 red rose bushes. There are 17 fewer pink rose bushes than red rose bushes. About how many rose bushes are in the city garden?

Round to the nearest 10 and solve.

119 rounds to 120 and 17 rounds to 20.

I know 120 – 20 is 100,
so I estimate 100 pink rose bushes.

I know 120 + 100 = 220,
so I estimate 220 rose bushes.

\[
119 + (119 - 17) = X
\]

\[
119 + 102 = X \text{ and } X = 221
\]

The actual number of rose bushes in the garden is 221.
That’s close to 220, so 221 is reasonable.

For the concert, 109 adult tickets were sold.
67 more student tickets were sold than adult tickets. How many tickets were sold in all?

1 Complete the chart to show the information in the problem. Round to the nearest hundred.

2 Write a number sentence to estimate the total number of tickets sold. Then find the actual total.

\[
\text{Tickets Sold} \\
\begin{array}{|c|c|}
\hline
\text{Adults} & \text{Students} \\
\hline
\text{ } & \text{ } \\
\hline
\end{array}
\]

\[
(\text{about }\underline{\quad}) \quad (\text{about }\underline{\quad} + \underline{\quad})
\]

Solution: About _____ tickets were sold.
Really, _____ tickets were sold.
3 Solve.

In the school parking lot there were 113 fewer bikes than cars. There were 185 cars. How many cars and bikes were in the parking lot?

Round to the nearest ten to estimate. Then complete the chart.

\[
\begin{array}{|c|c|}
\hline
\text{Cars} & \text{Bikes} \\
\hline
185 & 185 - 113 \\
\hline
(about 190) & (about 190 - \text{______}, \\
& \text{or \text{______}}) \\
\hline
\end{array}
\]

\[
X = \text{_____}
\]

Estimate: There were about \text{_____} cars and bikes.

Actual: \text{_____} + \text{_____} - \text{_____} = X

\[
X = \text{_____}
\]

Solution: There were \text{_____} cars and bikes in all.

4 Sarah read 215 pages of her book during the first week of vacation. During the second week she read 62 more pages than in the first week. How many pages did she read in the two weeks? Round to the nearest ten to estimate, then solve.

Show your work.

Estimate: She read about \text{_____} pages during the two weeks.

Actual: \text{__________________________}

\__________________________

Solution: Sarah read \text{_____} pages.
Estimate and Solve Two-Step Word Problems

Solve the problems.

1. Students collected cans to make robots. They collected 127 small cans. They collected 47 fewer large cans than small cans. Which number sentence could you use to figure out the total number of cans? $X$ is the unknown number of cans.
   
   A. $127 - 47 = X$
   
   B. $127 + 127 + 47 = X$
   
   C. $89 + 80 = X$
   
   D. $127 + 127 - 47 = X$

2. Jen has to put 180 cards into boxes of 6 cards each. She puts 150 cards into boxes. Which number sentence could you use to figure out how many more boxes Jen needs? $B$ stands for the unknown number of boxes.
   
   A. $180 = 6 \times B$
   
   B. $150 + 6 \times B = 180$
   
   C. $6 \times B + 180 = 150$
   
   D. $180 + 150 = 6 \times B$

3. An oil paint set costs $45 more than an easel. An easel costs $129. What is the total cost of the oil paint set and the easel? Show your work.

   Solution: ________________________________
Solve.

4 Sam has 223 postcards from all around the world. He has 9 sets of 8 cards from countries in Africa. How many of Sam’s cards are not from Africa?

*Show your work.*

Solution: ________________________________

5 A group of people walked 62 miles in Week 1 and 58 miles in Week 2. In Week 3, they walked 14 miles less than during Week 2. How many miles did the group walk in 3 weeks?

*Show your work.*

Solution: ________________________________

6 Donna used 30 buttons of different colors and sizes to make a design. She used 12 large blue buttons. The rest were small and yellow or small and green. There were the same number of yellow and green buttons. How many buttons were small and yellow?

A 9  C  18

B 22  D  42

Javy chose C as the correct answer. How did he get that answer?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Which answers don’t make sense?