Classwork

**Example 1**

Question #\_\_\_\_\_\_\_

Write it as a division expression.

Write it as a multiplication expression.

Make a rough draft of a model to represent the problem:

As you travel to each model, be sure to answer the following questions:

|  |  |  |  |
| --- | --- | --- | --- |
| **Original Question** | **Corresponding Division Expression** | **Corresponding Multiplication Expression** | **Write an Equation Showing the Equivalence of the Two Expressions.** |
| 1. How many $\frac{1}{2}$ miles are in $12$ miles?
 |  |  |  |
| 1. How many quarter hours are in $5$ hours?
 |  |  |  |
| 1. How many $\frac{1}{3}$ cups are in $9$ cups?
 |  |  |  |
| 1. How many $\frac{1}{8}$ pizzas are in $4$ pizzas?
 |  |  |  |
| 1. How many one-fifths are in $7$ wholes?
 |  |  |  |

**Example 2**

Molly has $9$ cups of flour. If this is $\frac{3}{4}$ of the number she needs to make bread, how many cups does she need?

* 1. Construct the tape diagram by reading it backward. Draw a tape diagram and label the unknown.
	2. Next, shade in $\frac{3}{4}$.
	3. Label the shaded region to show that $9$ is equal to $\frac{3}{4}$ of the total.
	4. Analyze the model to determine the quotient.

Exercises 1–5

1. A construction company is setting up signs on $2$ miles of road. If the company places a sign every $\frac{1}{4}$ mile, how many signs will it use?
2. George bought $4 $submarine sandwiches for a birthday party. If each person will eat $\frac{2}{3}$ of a sandwich, how many people can George feed?
3. Miranda buys $6$ pounds of nuts. If she puts $\frac{3}{4}$ pound in each bag, how many bags can she make?
4. Margo freezes $8$ cups of strawberries. If this is $\frac{2}{3}$ of the total strawberries that she picked, how many cups of strawberries did Margo pick?
5. Regina is chopping up wood. She has chopped $10$ logs so far. If the $10$ logs represent $\frac{5}{8}$ of all the logs that need to be chopped, how many logs need to be chopped in all?

Problem Set

Rewrite each problem as a multiplication question. Model your answer.

1. Nicole used $\frac{3}{8}$ of her ribbon to wrap a present. If she used $6$ feet of ribbon for the present, how much ribbon did Nicole have at first?
2. A Boy Scout has $3$ meters of rope. He cuts the rope into cords $\frac{3}{5}$ $m$ long. How many cords will he make?
3. $12$ gallons of water fill a tank to $\frac{3}{4}$ capacity.
	1. What is the capacity of the tank?
	2. If the tank is then filled to capacity, how many half-gallon bottles can be filled with the water in the tank?
4. Hunter spent $\frac{2}{3}$ of his money on a video game before spending half of his remaining money on lunch. If his lunch costs $\$10$, how much money did he have at first?
5. Students were surveyed about their favorite colors. $\frac{1}{4}$ of the students preferred red, $\frac{1}{8}$ of the students preferred blue, and $\frac{3}{5}$ of the remaining students preferred green. If $15$ students preferred green, how many students were surveyed?
6. Mr. Scruggs got some money for his birthday. He spent $\frac{1}{5}$ of it on dog treats. Then, he divided the remainder equally among his $3$ favorite charities.
	1. What fraction of his money did each charity receive?
	2. If he donated $\$60$ to each charity, how much money did he receive for his birthday?