

Mixed Number Word Problems with Bar Diagram Solutions

Name: _____

Date: _____

Using a bar diagram to solve word problems involving mixed numbers is a great way to organize calculations and illustrate solutions. Check out the four-step solution in the example below:

Example: Jenny, Lennie and Bennie drove to New Mexico for Spring Break. Jenny drove the first leg of the trip for $98 \frac{2}{3}$ miles. Lennie drove the second leg of the adventure for $153 \frac{3}{7}$ miles. Bennie drove the final $65 \frac{2}{6}$ miles before they arrived. How many miles had they driven in all?

Step 1: Insert the values to illustrate the situation:

$98 \frac{2}{3}$	$153 \frac{3}{7}$	$65 \frac{2}{6}$
$98 \frac{2}{3} + 153 \frac{3}{7} + 65 \frac{2}{6}$		

Step 2: Using the commutative property of addition, organize the addition expression as:

$98 \frac{2}{3}$	$153 \frac{3}{7}$	$65 \frac{2}{6}$
$(98 + 153 + 65) + (\frac{2}{3} + \frac{3}{7} + \frac{2}{6})$		

Step 3: Adding the whole numbers and finding a least common multiple for each fraction we get:

$98 \frac{2}{3}$	$153 \frac{3}{7}$	$65 \frac{2}{6}$
$(316) + (\frac{28}{42} + \frac{18}{42} + \frac{14}{42})$		

Step 4: Adding the whole number to the improper fraction that results from $(\frac{28}{42} + \frac{18}{42} + \frac{14}{42})$ the result is:

$98 \frac{2}{3}$	$153 \frac{3}{7}$	65
$316 + \frac{60}{42} = 317 \frac{18}{42} = \mathbf{317 \frac{3}{7}}$		

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You Try It

Directions: Use the four-step procedure to solve and illustrate solutions using the bar diagrams provided.

1. Kip and his friends, Chip and Rip, jump rope and record their skips by the mile. In a friendly competition, Kip calculated he had skipped $6\frac{5}{8}$ miles. Chip snipped that he had skipped a total of $4\frac{3}{5}$ miles. When Rip reported her skips she quipped, "I find I've skipped as many miles as both of you, combined!" How many miles had all three friends skipped all together?

A dashed bar diagram template consisting of a large rectangle with a dashed border. Inside, two vertical dashed lines divide the rectangle into three sections. Below this diagram is a solid rectangular box for writing the solution.

2. The transit authority had a two-month plan for a transportation tram to span $36\frac{5}{9}$ miles. One month into the grand plan, only $12\frac{9}{11}$ miles of track was complete. Two weeks later, another $11\frac{2}{3}$ miles of track was added. How many more miles of track needed to be complete to meet the transit authority's planned feat?

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3. Final Records mogul, Lionel Vogel, shipped $26\frac{8}{9}$ cases of vinyl during his first quarter as boss. In the second quarter, Lionel doubled Final Records' shipment. In the third quarter, Lionel shipped half as many cases of vinyl for Final as he did his first quarter. How much vinyl had Lionel shipped for Final in three quarters?

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