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 2/3 miles. Lennie drove the second leg of the adventure for 153 3/7 miles. Bennie drove the final 65 2/6 miles until 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: Use 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: Add the whole numbers and find 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: Add the whole number to the improper fraction that results from (28/42 + 18/42 + 14/42) the result is:

| $98 \frac{2}{3}$ | $153 \frac{3}{7}$ | 65 |

$$316 + \frac{60}{42} = 317 \frac{18}{42} = 317 \frac{3}{7}$$

Answers

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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 5/8 miles. Chip snipped that he had skipped a total of 4 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?

$6\frac{5}{8}$ miles	$4\frac{3}{5}$ miles	$11\frac{9}{40}$ miles

$22\frac{9}{20}$ miles
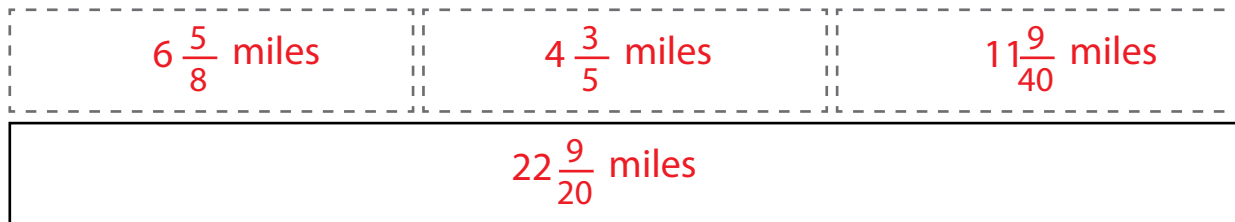
2. The transit authority had a two-month plan for a transportation tram to span 36 5/9 miles. One month into the grand plan, only 12 9/11 miles of track was complete. Two weeks later, another 11 2/3 miles of track was added. How many more miles of track need to be completed to meet the transit authority's planned feat?

$24\frac{8}{11}$ miles	$12\frac{9}{11}$ miles	$11\frac{2}{3}$ miles

$36\frac{5}{9}$ miles
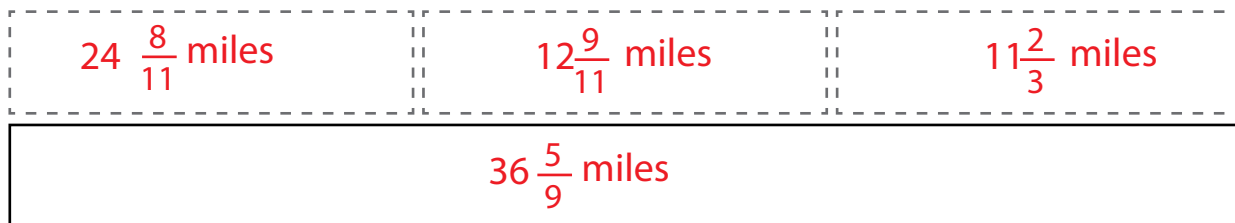
3. Final Records mogul, Lionel Vogel, shipped 26 8/9 cases of vinyl during his first quarter as boss. In the second quarter, Lionel doubled Final Records' shipment. In the third quarter, Lionel shipped half as many cases of vinyl for Final Records as he did his first quarter. How much vinyl had Lionel shipped for Final Records in three quarters?

$26\frac{8}{9}$ cases	$53\frac{7}{9}$ cases	$13\frac{4}{9}$ cases

$94\frac{1}{9}$ cases

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