

Name: ..... Class: .....

Add, subtract, multiply, and divide fractions and mixed numbers: word problems

- a. Mr and Mrs. James are travelling for a christmas holiday. Mrs. James has  $10\frac{1}{4}$  kg of baggage. Mr James has  $8\frac{1}{12}$  kg of baggage. How many kilograms of baggage do they have in all?



- b. Melvin is an electrical engineer. He was offered a job to wire Mrs. Johnson's house. He has  $4\frac{7}{8}$  cm of wire. He needs only  $3\frac{5}{16}$  cm of wire for this job. How much wire will he have left after the job?



- c. Janet wants to transfer 5 litres of oil from one container to another. She has a measuring jar that can only hold  $\frac{1}{4}$  of a litre each time. How many times will she need to use the measuring jar?

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Kg of baggage Mrs. James has =  $10\frac{1}{4}$

Kg of baggage Mr. James has =  $8\frac{1}{12}$

So, to get the total kilograms of baggages we add

$$10\frac{1}{4} + 8\frac{1}{12}$$

Let's first add the whole numbers and then the fractions

$$10\frac{1}{4} + 8\frac{1}{12} = (10+8)\frac{3}{12} + \frac{1}{12} = 18\frac{4}{12} \longrightarrow 18\frac{1}{3}$$

So, they have  $18\frac{1}{3}$  kg of baggage in all.



- b. Melvin is an electrical engineer. He was offered a job to wire Mrs. Johnson's house. He has  $4\frac{7}{8}$  cm of wire. He needs only  $3\frac{5}{16}$  cm of wire for this job. How much wire will he have left after the job?

To solve this problem let's subtract  $3\frac{5}{16}$  from  $4\frac{7}{8}$

Let's first subtract the whole numbers and then the fractions

$$4\frac{7}{8} - 3\frac{5}{16} = (4-3)\frac{14}{16} - \frac{5}{16} = 1\frac{9}{16}$$

So, he will have  $1\frac{9}{16}$  centimeters of wire left.



- c. Janet wants to transfer 5 litres of oil from one container to another. She has a measuring jar that can only hold  $\frac{1}{4}$  of a litre each time. How many times will she need to use the measuring jar?

To solve this problem let's divide 5 litres by the amount of fraction a litre can hold.

$$5 \div \frac{1}{4}$$

Let's multiply 5 by the reciprocal of  $\frac{1}{4}$  ( $\frac{4}{1}$ )

$$5 \times \frac{4}{1} \longrightarrow \frac{5 \times 4}{1} = 20$$

So, she will need to use the measuring jar 20 times