Unit 5 · Fraction and Decimal

HARDER PRACTICE QUESTIONS

Full marks 33

Write your answers on separate paper. Show your working, in the order brackets, of, ÷ and ×, then + and −. Give fractions in their lowest terms. The amounts on this sheet are made up for the problems.

1 Spot the errors [4]

Rehan worked out these four. Each answer is wrong. Find the right answer, and say what went wrong.

i. $\frac{1}{2} + \frac{1}{2} \times \frac{1}{2} = 1 \times \frac{1}{2} = \frac{1}{2}$

ii. $0.3 \times 0.2 = 0.6$

iii. $3 \div 0.5 = 1.5$

iv. "I spent $\frac{1}{4}$ of my money, then $\frac{2}{3}$ of the rest. So I spent $\frac{1}{4} + \frac{2}{3} = \frac{11}{12}$ of my money."

2 Estimate, then choose [3]

Round the numbers to estimate each answer. Then choose the exact answer from the list, without working it out in full.

List: 0.2499, 2.499, 9.702, 97.02, 2, 20

a. 19.8×0.49

b. $3.96 \div 0.198$

c. 0.51×0.49

3 A tank on the roof [4]

A family in Pokhara fills its roof tank to the top. In the morning they use $\frac{2}{5}$ of the water. At noon they use $\frac{1}{3}$ of what is left. In the evening they use 120 liters. Now the tank is $\frac{1}{5}$ full.

i. What part of the full tank is left after noon?

ii. What part of the full tank is 120 liters?

iii. How many liters does the tank hold?

iv. How many liters did they use at noon?

4 Passing the test [4]

There are 34 students in a class. Two thirds of the girls and three quarters of the boys passed a test, and the same number of girls and boys passed.

i. Draw the girls as a bar of 3 equal parts and the boys as a bar of 4 equal parts. Which parts show the students who passed?

ii. Since the same number passed, what does that tell you about the size of a girls' part and a boys' part?

iii. How many girls and how many boys are there?

iv. What fraction of the class passed?

5 At the tailor's [4]

A tailor has 12.6 m of cloth, bought at Rs 345.50 a meter. A kurta needs 2.25 m and a shawl 0.85 m.

i. What did the cloth cost?

ii. How many kurtas can she cut from it, and how much cloth is left?

iii. Can she cut a shawl from what is left? How much cloth is left then?

6 Fractions and decimals together [4]

Simplify, and give the answer as a fraction and as a decimal.

$0.75 + \left\{ \frac{1}{2} \text{ of } \left(2.4 - 1\frac{1}{5} \right) \right\} \div 0.3$

7 The missing number [3]

Find the number in each box. Work backwards.

a. $2.5 \times \square - 1.75 = 3.25$

b. $\frac{3}{4}$ of $\square = 0.6$

c. $\square \div 0.04 = 125$

8 Make your own [3]

Use $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$, each once, and two of the signs $+$, $-$, $\times$ and $\div$, to make a sum whose answer is:

i. greater than 1;

ii. less than $\frac{1}{10}$;

iii. between $\frac{1}{2}$ and 1.

Work out each one.

9 Think: the wrong button [4]

Sujan was meant to divide a number by 0.4, but he multiplied it by 0.4 instead. His answer was 8.4 less than the right answer.

i. Dividing by 0.4 is the same as multiplying by which number?

ii. So the difference between the right answer and his answer is how many times the number?

iii. Find the number, and check it.

iv. For which numbers would multiplying by 0.4 give a **bigger** answer than dividing by 0.4?