Unit 7 · Percentage

HARDER PRACTICE QUESTIONS

Full marks 34

Write your answers on separate paper. Show your working. Percent means "out of 100".

1 Which subject was best? [4]

Asmita's marks in three tests were: Nepali 36 out of 40, Maths 42 out of 50 and Science 17 out of 20.

i. Change each mark into a percentage.
ii. Put the subjects in order, best first.
iii. How many more marks out of 50 would she have needed in Maths to do as well as in Nepali?

2 A farm in three parts [4]

A farmer in Chitwan plants rice on 45% of her land and maize on $\frac{3}{10}$ of it. The rest is for vegetables. (The farm is made up for the problem.)

i. What percentage of the land is maize?
ii. What percentage is vegetables?
iii. Write the vegetable part as a decimal and as a fraction.
iv. Is more of the land rice, or maize and vegetables together?

3 Spot the errors [3]

Gaurav wrote: "$0.5 = 5\%$, and $3\% = 0.3$." Both are wrong.

i. Correct each one.
ii. Give a rule that would have stopped both mistakes.

4 A fruit survey [3]

Each of the 20 students in a Grade 5 class chose one favorite fruit. 9 chose mango, 4 chose banana, 2 chose apple and the rest chose orange. (The class is made up for the problem.)

i. How many chose orange?
ii. What percentage of the class chose each fruit?
iii. Hari says: "9 students chose mango, so mango got 9%." What is his mistake?

5 Put them in order [3]

Write these from the smallest to the biggest. Two of them are equal: which two?

0.6, 58%, $\frac{3}{5}$, 0.065

6 A frame on a grid [4]

On squared paper, draw a square 10 squares long and 10 squares broad. Color the squares all round its edge, one square thick, like a picture frame.

i. How many squares did you color? What percentage of the big square is that?
ii. What percentage is not colored?
iii. Now color a second frame, just inside the first. What percentage of the big square is colored now?

7 Taller than before [3]

A young tree was 2 m tall last year. Now it is 3 m tall.

i. What fraction of last year's height is its height now? Write it as an improper fraction.
ii. Change it into a percentage.
iii. Nabin says a percentage can never be more than 100%. Explain why that is true for the share of girls in a class, but not here.

8 Work backwards [3]

Shruti got 80% in a test with full marks 25.

i. Write 80% as a fraction with denominator 100.
ii. How many marks did she get out of 25?
iii. Out of 25, what mark would be 100%? And 4%?

9 Is it possible? [4]

Give a reason for each.

i. In a class, 55% of the students are girls and 55% are boys.
ii. A student gets 120% in a test.
iii. 0.5% of the people in a village are over 90 years old.
iv. 2.5 written as a percentage is 250%.

10 Think [3]

Dipesh sowed 8 bean seeds and 3 of them sprouted. Prarthana sowed 10 seeds and 4 sprouted. Dipesh says his seeds did better, because only 5 of his didn't sprout, and 6 of hers didn't. Who is right? Use percentages to explain.