

- The **unitary method** involves finding the value of 'one unit' and then using this information to answer the question.
- When dealing with percentages, finding 'one unit' corresponds to finding one per cent (1%).
- Once the value of 1% of an amount is known, it can be multiplied to find the value of any desired percentage.

QUESTION 1

- a If 50% of a number is 32, what is the number? _____
- b Find the total cost if 60% of it is \$90. _____
- c If 18% of a number is 9, what is the number? _____
- d If 150% of a number is 60, what is the number? _____

QUESTION 2 Use the unitary method to solve the following.

- a 20% of a number is 32, what is the number? _____
- b 10% of a number is 63, what is the number? _____
- c 15% of a number is 360, find the number. _____
- d 48% of a number is 336, find the number. _____

QUESTION 3 Find 100% of the number if a part of it is given.

- a 40% is 80; 100% = _____
- b 20% is 92; 100% = _____
- c 25% is 120; 100% = _____
- d 15% is 60; 100% = _____
- e 50% is 70; 100% = _____
- f 75% is 450; 100% = _____
- g 5% is 83; 100% = _____
- h 45% is 119; 100% = _____
- i 2% is 94; 100% = _____
- j 8% is 34; 100% = _____
- k 16% is 46; 100% = _____
- l $12\frac{1}{2}\%$ is 230; 100% = _____

QUESTION 4

- a If $33\frac{1}{3}\%$ of a number is 9, find the number. _____
- b John's income increased by 3%. If his income rose by \$645, find his previous income. _____
- c Alku receives a 15% increase in her weekly wage.
If the increase is \$75, find her new weekly wage. _____
- d In the first year, the price of a block of land increased by 20%.
If this increase amounted to \$28 000, what is the price now? _____
- e Hari spends 40% of his weekly income on rent.
If his rent is \$220, find his income. _____

- f** When an amount is increased by 20% it becomes \$65.
What was the original amount? _____
- g** The population of a small town decreases by 8% every year.
If this year's population is 4600, what was the population last year? _____
- 1** The price of a stereo is \$1200. The discount is 30%. What is the discount? _____
- 2** Out of 630 students, 80% swim. How many swim? _____
- 3** Out of 120 students, 65% went to the camp. How many went to the camp? _____
- 4** Clare obtained 90 out of 120 marks in a mathematics test.
What percentage was this? _____
- 5** Decrease \$100 by 10% and then increase this result by 10%. _____
- 6** If 35% of a number is 70, find the number. _____
- 7** A blanket that cost a retailer \$56.50 sells for \$110.
What percentage profit is made? _____
- 8** A salesman sold goods worth \$35 000. Find the commission he gained on the sale if the first \$10 000 sales earns 7% and the amount sold above \$10 000 earns 9%. _____
- 9** Find the simple interest on \$2000 for 1 year at 9.5% per annum. _____
- 10** Find the simple interest on \$3560 for 3 years at $8\frac{1}{4}$ % p.a. _____
- 11** Find 55% of \$1640 and add it to 45% of \$150. _____
- 12** In an examination, 90% of a class of 30 students passed. How many students failed? _____
- 13** Michael bought a second-hand car for \$8000 and spent \$2300 repairing it. If he sold the car for \$15 600, find:
- a** his gain as a percentage of the total cost price (including cost of repairs). _____
- b** his gain as a percentage of the selling price. _____
- 14** A tiler makes a mixture for a bathroom floor with 5 blue tiles and 4 grey tiles to each white tile. Express the composition of the floor as percentages. Also find the number of blue tiles used in a floor of 1690 tiles.
- _____