

Student Text *UNIT 2 Percentages*

Answers

2.1 Fractions, Decimals and Percentages

1. (a) $\frac{1}{10}$ (b) $\frac{4}{5}$ (c) $\frac{9}{10}$ (d) $\frac{1}{20}$ (e) $\frac{1}{4}$ (f) $\frac{3}{4}$
 (g) $\frac{7}{20}$ (h) $\frac{19}{50}$ (i) $\frac{1}{25}$ (j) $\frac{3}{25}$ (k) $\frac{41}{50}$ (l) $\frac{37}{50}$
2. (a) 0.32 (b) 0.5 (c) 0.34 (d) 0.2 (e) 0.15 (f) 0.81
 (g) 0.04 (h) 0.03 (i) 0.07 (j) 0.18 (k) 0.75 (l) 0.73
3. (a) 50% (b) 74% (c) 35% (d) 8% (e) 10% (f) 52%
 (g) 80% (h) 7% (i) 4% (j) 18% (k) 40% (l) 30%
4. (a) 50% (b) 70% (c) 20% (d) 75% (e) 10% (f) 90%
 (g) 80% (h) 8% (i) 32% (j) 35% (k) 28% (l) $66\frac{2}{3}\%$
5. (a) $\frac{2}{3} = \frac{10}{15} = \frac{16}{24}$ (b) 17.5% or $17\frac{1}{2}\%$
6. (a) correct drawing (b) 75%
7. (a) 180 m² (to the nearest square metre) (b) (i) 120 m² (ii) 20 %

2.2 Fractions and Percentages of Quantities

1. (a) 20 (b) \$2.50 (c) \$1.60 (d) J\$2500 (e) \$200
 (f) 180 (g) \$4 (h) 600 (i) 750 (j) 16 kg
 (k) 3.5 kg (l) 15 kg (m) 5 m (n) 10 m (o) \$7.50
2. (a) 32 (b) 90 (c) 18 (d) 90 (e) 120 (f) 150
3. (a) 400 g (or 0.4 kg) (b) 240 g (or 0.24 kg)
4. J\$3000
5. \$25
6. J\$15 000
7. J\$6000
8. 360 m
9. J\$150
10. 9 kg
11. J\$160
12. 2.4 kg (or 240 g)
13. (a) \$5.60 (b) \$5 (c) 2.25 metres

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14. (a) \$90 (b) $\frac{1}{6}, \frac{2}{9}, \frac{1}{3}, \frac{5}{6}$
15. 700 students
16. 1400 headphones
17. No. The deposit of $\frac{2}{5}$ is equivalent to 40% of the total price, therefore 30% of the price is not enough to pay the deposit.

2.3 Quantities as Percentages

1. (a) 16% (b) 12% (c) 40% (d) 30% (e) 12%
 (f) 15% (g) 15% (h) 30% (i) 90% (j) 40%
 (k) 42% (l) 65% (m) 40% (n) 30% (o) 85%
2. 40% of the class are girls and 60% are boys.
3. 20%
4. 8%
5. 56% *Jamaica* supporters and 44% *Trinidad* supporters.
6. 20%
7. 60%
8. 81%
9. 92%
10. $33\frac{1}{3}\%$
11. 4%
12. 80%
13. 45%
14. (a) 40% (b) A (c) 37.5% (d) (i) \$110 (ii) \$0.88 (or 88 cents)

2.4 More Complex Percentages

1. (a) \$16 (b) \$12.45 (c) \$5.04
 (d) \$1.41 (e) \$3.59 (f) 69 cents
2. (a) \$483.48 (b) \$1184.74 (c) \$15 240 (d) \$205.37 (e) \$390.60
3. (a) J \$1320 (b) J\$1537.50
4. 500 fish

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2.4

5. \$1375
6. (a) \$5100 (b) \$26 900 (c) $\$1200 + \$2070 = \$3270$
7. J\$225 357.60
8. J\$9450
9. \$150
10. J\$577.50
11. (a) \$41.40 (b) (i) \$69 (ii) 945 (iii) \$295.80

$$\begin{array}{r} 24 \times \\ \hline 18900 \\ 3780 \\ \hline 22680 \end{array}$$
12. (a) (i) \$49.17 (ii) \$347.17
 (b) (i) \$11.67 ($\$400 - \388.33) (ii) *Berries' Store*

2.5 Percentage Increase and Decrease

1. 21.4%
2. 25%
3. 13.1%
4. 18.9%
5. Kate has a 23.5% saving and John has a 12.7% saving.
6. 40%
7. There is a 10.3% increase in the number of students and a 2.7% increase in the number of teachers. Therefore, class sizes will increase because the number of teachers has not increased at the same rate as the number of students.
8. 25%
9. 25%
10. 4.3% increase, therefore estimated value after another year is \$500 640 (using 4.3%)
11. 4.2%
12. Percentage decrease in the value of the IT system is greatest during the first year. (16.7%)
13. (a) J\$70 (b) (i) J\$64.90 (ii) It would be J\$19.90 cheaper. (c) 14.1%
14. (a) \$80 (b) 15%
15. 12.5%