

WORKSHEET

Percentages without calculators

Calculators not allowed.

1 Convert each of the following percentages to a simplified fraction:

- | | | | | | |
|---------------------|-------|-------|-------|-------|-------|
| a 70% | _____ | b 12% | _____ | c 40% | _____ |
| d $33\frac{1}{3}\%$ | _____ | e 5% | _____ | f 75% | _____ |

2 Convert each of the following percentages to a decimal:

- | | | | | | |
|-------|-------|---------------------|-------|---------|-------|
| a 18% | _____ | b 9% | _____ | c 65% | _____ |
| d 20% | _____ | e $12\frac{1}{2}\%$ | _____ | f 88.3% | _____ |

3 Write each of these fractions as a percentage:

- | | | | | | |
|------------------|-------|-----------------|-------|-----------------|-------|
| a $\frac{1}{4}$ | _____ | b $\frac{1}{5}$ | _____ | c $\frac{2}{3}$ | _____ |
| d $\frac{9}{10}$ | _____ | e $\frac{1}{8}$ | _____ | f $\frac{3}{5}$ | _____ |

4 Find:

- | | | | | | |
|-----------------------------|-------|------------------------------|-------|----------------|-------|
| a 25% of \$260 | _____ | b 10% of \$110 | _____ | c 60% of \$80 | _____ |
| d $12\frac{1}{2}\%$ of \$36 | _____ | e 5% of \$180 | _____ | f 20% of \$748 | _____ |
| g 1% of \$255 | _____ | h $33\frac{1}{3}\%$ of \$420 | _____ | | |

5 Increase:

- | | | | |
|------------------------------|-------|---------------|-------|
| a \$320 by 5% | _____ | b \$42 by 30% | _____ |
| c \$120 by $66\frac{2}{3}\%$ | _____ | d \$700 by 8% | _____ |

6 Which of the following is the correct answer to: 18% of 500? Circle the correct answer.

- A** 90 **B** 9 **C** 200 **D** 2

7 Express as a percentage:

- | | | | |
|-----------------------------|-------|-------------------------------|-------|
| a 11 out of 55 | _____ | b \$18 out of \$24 | _____ |
| c 40 minutes out of 2 hours | _____ | d 12 cm out of 1 m | _____ |
| e 375 mL out of 3 L | _____ | f 12 goals out of 15 attempts | _____ |

8 Find:

- | | | | | | |
|-----------------------------|-------|-----------------|-------|--------------------------------|-------|
| a 80% of 4 L | _____ | b 5% of \$72 | _____ | c $33\frac{1}{3}\%$ of 2 hours | _____ |
| d $2\frac{1}{2}\%$ of \$300 | _____ | e 1% of 60 | _____ | f 75% of 5 kg | _____ |
| g 15% of \$20 | _____ | h 110% of \$350 | _____ | | |

9 Find 7% of \$850. Circle the correct answer.

- A \$955 B \$59.50 C \$595 D \$95.50

10 Decrease:

- a \$150 by 5% _____ b \$77 by 10% _____
 c \$250 by 80% _____ d \$440 by $12\frac{1}{2}\%$ _____

11 50% of a number is 32. What is the number? _____

12 Which of the following is 22% of \$1400? Circle the correct answer.

- A \$74.00 B \$30.80 C \$740.00 D \$308.00

13 If 9% of an amount is \$27, what is the amount? _____

14 Express each of the following as a percentage:

- a 12 out of 20 _____ b \$40 out of \$160 _____
 c 3 months out of 2 years _____ d 80 kg out of 0.4 t _____
 e 3 hours out of 1 day _____ f 20 serves out of 25 attempts _____

15 Which of the following is 3% of \$450? Circle the correct answer.

- A \$15.00 B \$13.50 C \$7.50 D \$7.00

16 If 15% of an amount is \$45, what is the amount? _____

17 What is the price of a \$68 pair of jeans after 10% GST has been added? _____

18 There were 24 boys and 40 girls at the cinema. What percentage of the cinema goers were girls? _____

19 30% of a number is 18. What is the number? _____

20 What is the price of an \$84 DVD player after a 25% discount? _____

21 Aaron earns 4% commission on the sale of cars. How much does he earn for selling a \$34 500 car? _____

22 Tegan had a weekly wage of \$800 but it increased to \$832 this week.

- a What was the increase in Tegan's wage? _____
 b What was the percentage increase of her wage? _____

23 Of the students at a school, 7% have red hair. If this is 63 students, how many students are there at the school? _____

24 Dario earns \$900 per week but spends \$270 of it on rent. What percentage of his weekly earnings is this? _____

25 A computer was bought for \$2000 and resold for \$1700. Calculate the loss as a percentage of the cost price. _____

Answers

- 1** a $\frac{7}{10}$ b $\frac{3}{25}$ c $\frac{2}{5}$ d $\frac{1}{3}$
 e $\frac{1}{20}$ f $\frac{3}{4}$
- 2** a 0.18 b 0.09 c 0.65 d 0.2
 e 0.125 f 0.883
- 3** a 25% b 20% c $66\frac{2}{3}\%$ d 90%
 e $12\frac{1}{2}\%$ f 60%
- 4** a \$65 b \$11 c \$48 d \$4.50
 e \$9 f \$149.60 g \$2.55 h \$140
- 5** a \$336 b \$54.60 c \$200 d \$756
- 6** A
- 7** a 20% b 75% c $33\frac{1}{3}\%$ d 12%
 e 12.5% f 80%
- 8** a 3.2 L b \$3.60 c 40 min d \$7.50
 e 0.6 f 3.75 kg g \$3 h \$385
- 9** B
- 10** a \$142.50 b \$69.30 c \$50 d \$385
- 11** 64
- 12** D
- 13** \$300
- 14** a 60% b 25% c $12\frac{1}{2}\%$ d 20%
 e $12\frac{1}{2}\%$ f 80%
- 15** B
- 16** \$300
- 17** \$74.80
- 18** $62\frac{1}{2}\%$
- 19** 60
- 20** \$63
- 21** \$1380
- 22** a \$32 b 4%
- 23** 900
- 24** 30%
- 25** 15%