

Level 3/4 practice

- 1 The first 4 triangular numbers are shown in the diagram below.



The sixth triangular number is:

- A 28 B 10 C 15 D 21
- 2 What type of number is 25?
 A prime B square
 C even D triangular
- 3 The first 4 prime numbers are:
 A 1, 2, 3, 4 B 2, 4, 6, 8
 C 1, 3, 5, 7 D 2, 3, 5, 7
- 4 Chloe has \$3 and Chrissie has \$5. How much do they have altogether?
 A \$2 B \$8 C \$35 D \$15
- 5 Susan has \$23 and gives Chantelle \$7. How much does Susan have left?
 A \$6 B \$16 C \$30 D \$15
- 6 There are 685 students in a school. If 156 students are in Year 7, the number of students in the other years is:
 A 841 B 529 C 531 D 539
- 7 There are 387 students in the hall. Another 156 students go into the hall. The number of students in the hall is:
 A 443 B 543 C 433 D 443
- 8 The best estimate for $1687 + 489$ is:
 A 2000 B 2200 C 2500 D 3000
- 9 Melissa has 3 red envelopes each containing \$35. The total amount is:
 A \$105 B \$35 C \$5 D \$38
- 10 The whole school is having an assembly. The 15 classes, each containing 24 students, are sent to the hall. The number of students sent to the hall is:
 A 360 B 120 C 320 D 220
- 11 The temperature was 8°C . It dropped by 10°C . The temperature is now:
 A 18°C B 2°C C -2°C D -18°C
- 12 The temperature overnight was -5°C . It rose by 12°C . The new temperature is:
 A 17°C B -17°C C -7°C D 7°C
- 13 What fraction is shaded in the diagram below?



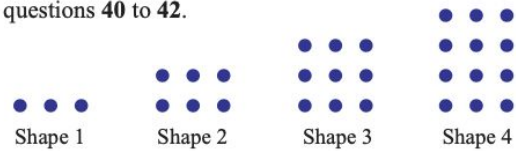
- A $\frac{3}{5}$ B $\frac{2}{5}$ C $\frac{1}{5}$ D $\frac{4}{5}$

- 14 Name the numerator in $\frac{8}{9}$.
 A 9 B 89 C 98 D 8
- 15 Express $\frac{11}{5}$ as a mixed numeral.
 A $3\frac{1}{5}$ B $\frac{5}{11}$ C $2\frac{1}{5}$ D $2\frac{4}{5}$
- 16 Which fraction is equivalent to $\frac{1}{3}$?
 A $\frac{4}{12}$ B $\frac{3}{10}$ C $\frac{6}{15}$ D $\frac{3}{6}$
- 17 When simplified, $\frac{8}{10}$ is equivalent to:
 A $\frac{2}{5}$ B $\frac{4}{2}$ C $\frac{5}{4}$ D $\frac{4}{5}$
- 18 Simplify $4 + \frac{2}{3}$.
 A $\frac{42}{3}$ B $4\frac{2}{3}$ C $\frac{34}{2}$ D $3\frac{2}{4}$
- 19 Simplify $\frac{3}{10} + \frac{7}{20}$.
 A $\frac{10}{30}$ B $\frac{37}{20}$ C $\frac{13}{20}$ D $\frac{73}{200}$
- 20 Simplify $\frac{4}{5} - \frac{1}{10}$.
 A $\frac{7}{10}$ B $\frac{3}{5}$ C $\frac{4}{10}$ D $\frac{4}{50}$
- 21 There are 51 people travelling to a sports carnival. If each car carries 4 people, the number of cars needed is:
 A 12 B $12\frac{3}{4}$ C 13 D $13\frac{1}{4}$
- 22 As an improper fraction, $1\frac{4}{7}$ is:
 A $\frac{14}{7}$ B $\frac{11}{7}$ C $1\frac{7}{4}$ D $\frac{7}{11}$

- 23** As a mixed number, $\frac{29}{12}$ is:
A $\frac{29}{12}$ **B** $2\frac{9}{12}$ **C** $2\frac{5}{12}$ **D** $\frac{12}{29}$
- 24** $3 - \frac{5}{12}$ is:
A $3\frac{5}{12}$ **B** $3\frac{7}{12}$ **C** $2\frac{5}{12}$ **D** $2\frac{7}{12}$
- 25** $\frac{6}{12} + \frac{5}{12} =$
A $\frac{11}{24}$ **B** $\frac{1}{24}$ **C** $\frac{11}{12}$ **D** $\frac{1}{12}$
- 26** $\frac{1}{3} + \frac{2}{5} =$
A $\frac{3}{5}$ **B** $\frac{3}{15}$ **C** $\frac{5}{6}$ **D** $\frac{11}{15}$
- 27** Simplify $5 \times \frac{3}{4}$.
A 4 **B** $3\frac{1}{4}$ **C** $2\frac{2}{5}$ **D** $3\frac{3}{4}$
- 28** Find $\frac{2}{3}$ of \$90.
A \$33 **B** \$60 **C** \$20 **D** \$30
- 29** Write $5 + \frac{8}{100}$ in decimal form.
A 5.08 **B** 50.8 **C** 0.508 **D** 508
- 30** Evaluate $1.2 + 3.06$.
A 4.8 **B** 3.2 **C** 3.26 **D** 4.26
- 31** Evaluate $8.7 - 5.31$.
A 3.39 **B** 2.66 **C** 2.76 **D** 3.49
- 32** Evaluate 7×1.4 .
A 9.8 **B** 8.3 **C** 7.8 **D** 9.1
- 33** Evaluate $84.2 \div 2$.
A 4.21 **B** 21.0 **C** 24.1 **D** 42.1
- 34** Evaluate $8 \div 10$.
A 8 **B** 0.8 **C** 0.08 **D** 80
- 35** Evaluate 0.18×1000 .
A 18 **B** 1.8 **C** 180 **D** 0.0018
- 36** Express 75% as a simplified fraction.
A $\frac{1}{4}$ **B** $\frac{3}{4}$ **C** $\frac{75}{100}$ **D** $\frac{15}{20}$
- 37** What fraction is equivalent to $33\frac{1}{3}\%$?
A 33 **B** $\frac{1}{3}$ **C** $33\frac{1}{3}$ **D** 3
- 38** A \$70 shirt has 10% off. The new *price* is:
A \$70 **B** \$63 **C** \$10 **D** \$7

- 39** A \$250 camera is to be discounted by 20%. The *discount* is:
A \$200 **B** \$50 **C** \$230 **D** \$270

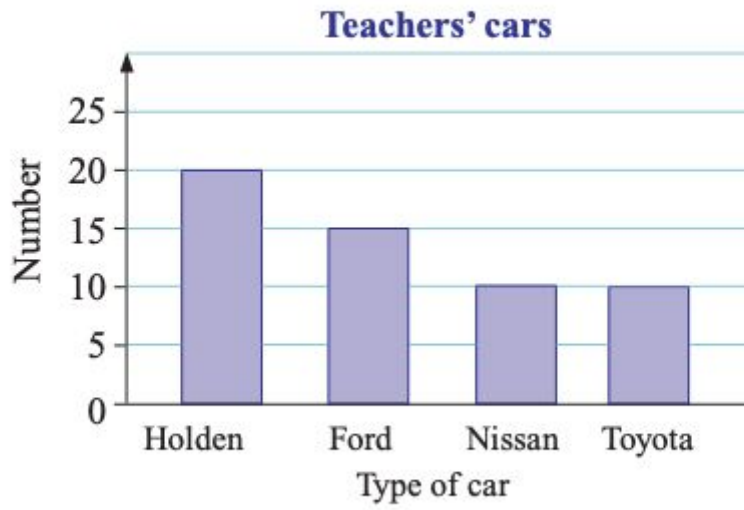
Use the pattern of counters shown below to answer questions 40 to 42.



- 40** The number of counters needed to make shape 5 is:
A 15 **B** 25 **C** 5 **D** 10
- 41** A rule that could *not* be used to find the number of counters needed for each shape is:
A it's the 3 times table
B start with 3 and add 3
C multiply the shape number by 3
D add 3 to the shape number
- 42** The number of counters needed to make shape 100 is:
A 100 **B** 300 **C** 103 **D** 130
- For questions 43 to 45 consider the number pattern 6, 7, 8, 9, ...
- 43** The 5th term of the number pattern is:
A 5 **B** 8 **C** 10 **D** 30
- 44** A rule that could be used to find each term given its position number is:
A position number + 5
B position number + 6
C position number \times 6
D position number \times 6 + 1
- 45** The 100th term of the pattern is:
A 105 **B** 106 **C** 600 **D** 109

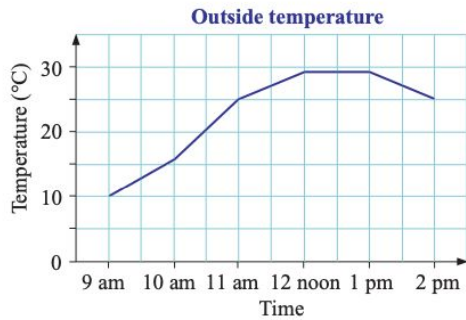
- 46** $6 + 3 \times 4 =$
A 36 **B** 18 **C** 13 **D** 7
- 47** $4 \times (2 + 5) - 1 =$
A 27 **B** 12 **C** 6 **D** 0
- 48** 5 cm 3 mm is equal to:
A 53 cm **B** 5.3 cm
C 0.53 cm **D** 5300 cm

Use the graph below to answer questions 94 to 96.



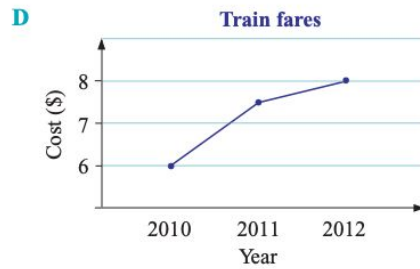
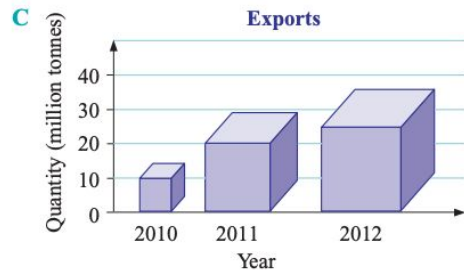
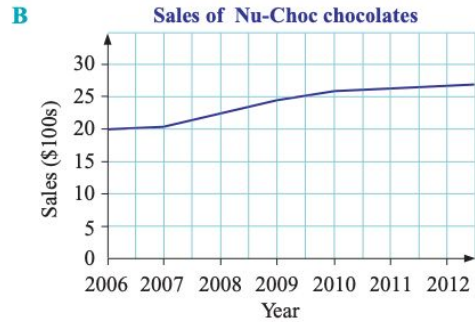
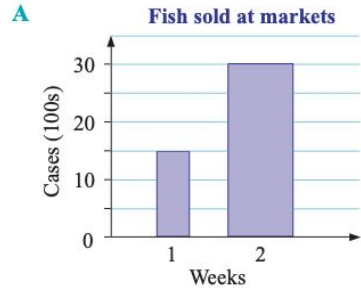
- 94** The title of this graph is:
A Number **B** Type of car
C Teachers' cars **D** Holden
- 95** The label of the horizontal axis is:
A Number **B** Type of car
C Teachers' cars **D** Holden
- 96** The number of Nissans is:
A 20 **B** 15 **C** 10 **D** 55

Use the graph below for questions **97** to **100**.



- 97** The type of graph is:
A sector **B** column **C** bar **D** line
- 98** The temperature at 11 am is:
A 10°C **B** 20°C **C** 25°C **D** 30°C
- 99** The vertical axis goes up by:
A temperature **B** 1°C
C 5°C **D** 10°C
- 100** An estimate for the temperature at 9:30 am is:
A 10°C **B** 13°C **C** 15°C **D** 20°C
- 101** In a survey, 85% of people stated that smoking should be allowed in restaurants. Which group was probably surveyed?
A any member of the population
B people in a restaurant
C people exiting a tobacco store
D restaurant owners

- 102** Which graph accurately represents the information?



Check your answers

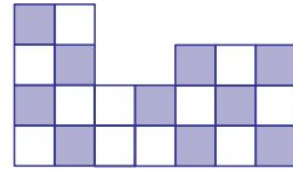
1 D	2 B	3 D	4 B	5 B
6 B	7 B	8 B	9 A	10 A
11 C	12 D	13 A	14 D	15 C
16 A	17 D	18 B	19 C	20 A
21 C	22 B	23 C	24 D	25 C
26 D	27 D	28 B	29 A	30 D
31 A	32 A	33 D	34 B	35 C
36 B	37 B	38 B	39 B	40 A
41 D	42 B	43 C	44 A	45 A
46 B	47 A	48 B	49 B	50 D
51 B	52 C	53 D	54 C	55 C
56 B	57 C	58 B	59 B	60 B
61 C	62 D	63 A	64 A	65 C
66 B	67 A	68 B	69 D	70 B
71 A	72 D	73 B	74 D	75 B
76 A	77 C	78 C	79 C	80 D
81 A	82 B	83 C	84 B	85 D
86 AC	87 C	88 B	89 D	90 B
91 B	92 D	93 D	94 C	95 B
96 C	97 D	98 C	99 C	100 B
101 C	102 B			

Number and Indices level 4/5 and above

- 1** Write the multiples of:
- a** 2 between 13 and 35 **b** 9 between 26 and 73 **c** 4 that are less than 65
- 2**
- a** List the multiples of 8 less than 100.
b List the multiples of 10 less than 100.
c Write the common multiples of 8 and 10 that are less than 100.
d What is the LCM of 8 and 10?
- 3**
- a** Write the factors of 20.
b Write the factors of 35.
c What is the HCF of 20 and 35?
- 4** Use a factor tree to write the following numbers as a product of prime factors.
- a** 50 **b** 130 **c** 520
- 5** Use the method of division by primes to write the following numbers as a product of prime factors.
- a** 140 **b** 230 **c** 540
- 6**
- a** Write 25 and 40 as a product of prime factors.
b Find the HCF of 25 and 40.
c Find the LCM of 25 and 40.
- 7**
- a** Write 180 and 240 as a product of prime factors.
b Find the HCF of 180 and 240.
c Find the LCM of 180 and 240.
- 8** Find the HCF and LCM of the following pairs of numbers. First write each number as a product of prime factors.
- a** 70 and 84 **b** 60 and 90 **c** 280 and 400
- 9** Find the following.
- a** $\sqrt{9}$ **b** $\sqrt{1}$ **c** $\sqrt{169}$ **d** $\sqrt[3]{125}$ **e** $\sqrt[3]{729}$ **f** $\sqrt[3]{1331}$
- 10** Which of the numbers 2, 3, 4, 5, 6, 8, 9, 10, 11, 12 are factors of:
- a** 4884? **b** 23 400? **c** 161 040?
- 11** Between which two numbers does $\sqrt{70}$ lie?
- 12** Evaluate:
- a** $986 \div 29$ **b** $992 \div 64$
- 13** Evaluate:
- a** $16 - 4 \times 2$ **b** $3^2 + 7 \times 2^3$ **c** $\sqrt{\frac{10^2 + 8}{3}}$

Fractions

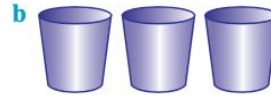
- 1 What fraction of the diagram shown is:
a shaded? **b** unshaded?
- 2 If $\frac{5}{13}$ of a diagram is shaded, what fraction is unshaded?
- 3 Convert $\frac{47}{9}$ to a mixed number.
- 4 Convert $8\frac{4}{7}$ to an improper fraction.
- 5 Complete: $\frac{7}{12} = \frac{49}{\square}$
- 6 Arrange in ascending order: $\frac{7}{10}, \frac{4}{5}, \frac{9}{20}$



- 7 State the reciprocal of $\frac{5}{8}$.
- 8 Simplify the following.
a $\frac{4}{5} + \frac{1}{3}$ **b** $\frac{11}{12} - \frac{1}{3}$ **c** $\frac{3}{7} \times \frac{1}{4}$ **d** $\frac{5}{6} \div \frac{1}{4}$
- 9 Simplify $\frac{1}{2} \times \frac{2}{3} + \frac{1}{4}$.
- 10 Katzurina donated $\frac{2}{11}$ of her weekly income to charity. If her weekly income is \$495, how much did she donate?

Algebra

- 1 If there are p marbles in each cup, write algebraic expressions for the total number of marbles in each of the following diagrams.



- 2 Simplify the following.

a $6 \times p$

d $8 \times a \times b$

b $g \times r$

e $3 \times m \times m$

c $m \times 5$

f $5 \times a + 3 \times q$

- 3** Insert multiplication signs to show the meaning of:
- a** $3p$ **b** ab **c** m^2 **d** $5x^2$ **e** $6pq$
- 4** Simplify the following.
- a** $p + p + p$ **b** $y + y + y + y + y$ **c** $z \times 1$
d $3pq \times 1$ **e** $0 \times 5p$
- 5** If $m = 3$ and $n = 4$, evaluate the following.
- a** mn **b** $5mn$ **c** $7m - 3n$ **d** n^2 **e** $4n^2$
- 6** Write the following in fraction form.
- a** $t \div 2$ **b** $g \div r$ **c** $r \div g$ **d** $4w \div 7$ **e** $3 \div 2x$
- 7** Show the meaning of the following expressions by inserting a division sign.
- a** $\frac{k}{3}$ **b** $\frac{4}{m}$ **c** $\frac{p}{q}$ **d** $\frac{3e}{4}$ **e** $\frac{mn}{t}$
- 8** If $p = 4$ and $q = 5$, evaluate the following.
- a** $\frac{q}{5}$ **b** $\frac{24}{p}$ **c** $\frac{5p}{q}$ **d** $\frac{4q}{p}$ **e** $\frac{5p}{2q}$
- 9** If $p = 7$ and $q = 3$, evaluate the following.
- a** $3(p + 1)$ **b** $4(q - 3)$ **c** $q(q + 1)$ **d** $5(q - 4)$ **e** $pq(p - 5)$
- 10** If $p = 12$ and $q = 5$, evaluate the following.
- a** $\frac{p + 9}{3}$ **b** $\frac{q - 3}{2}$ **c** $\frac{26}{p + 1}$ **d** $\frac{p + 6}{q + 1}$ **e** $\frac{3p + 3}{q + 8}$

Fractions, decimals and percentages



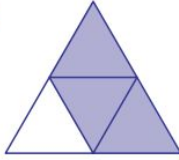
1 Complete the following table.

	Fraction	Decimal	Percentage
a	$\frac{1}{10}$		
b		0.2	
c			25%
d	$\frac{1}{3}$		
e		0.375	
f			50%
g	$\frac{5}{8}$		
h			$66\frac{2}{3}\%$
i		0.85	
j	$\frac{98}{100}$		

2 What percentage of these diagrams is:

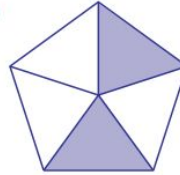
i shaded?

a



ii unshaded?

b



3 Express each percentage as a simplified fraction.

a 25%

b 60%

c 72%

d 86%

4 a Write 59 out of 100 as a percentage.

b Emily scored 78 out of 100 in her Science exam. Write this as a percentage.

c Write 33 out of 50 as a percentage.

d Linda scored 19 out of 25 in her Japanese exam. Write this as a percentage.

5 Express these percentages as decimals.

a 43%

b 29%

c 123%

d 0.35%

6 Express the following as percentages.

a $\frac{1}{4}$

b 0.312

c 4.8

d $\frac{2}{3}$

e $\frac{5}{8}$

7 a Write 78 g as a percentage of 500 g.

b Write 38c as a percentage of \$2.

c Write 35 kg as a percentage of 140 kg.

8 Convert each to a percentage and arrange in ascending order: $\frac{3}{5}$, 68%, 0.48, $\frac{2}{3}$

9 a Increase 40 m by 12%.

b Katherine buys pens for 50c each. She sells them at an increased price of 150%. What is the selling price?

c Decrease 200 m by 30%.

10 In a class of 28 students there are 13 boys. Write the ratio of boys to girls.

11 Express each ratio in simplest form.

a 12 : 40

b 30 : 108

12 State the value of 8 in 0.148 507.

13 Express $\frac{7}{100} + \frac{9}{1000}$ as a decimal.

14 a Express 0.08 as a fraction.

b Express $\frac{3}{4}$ as a decimal.

c Express $\frac{7}{9}$ as a decimal.

15 Write 15.0775 correct to the nearest hundredth.

16 Insert one of >, < or = to make the following statements correct.

a 21.12 21.012

b 19.6 19.60



- 17** The decimal number closest to 0.47 is:
- A** 0.45 **B** 0.41
C 0.5 **D** 0.05
- 18** Simplify the following.
- a** $4.8 \div 0.4 \times 6$ **b** $1.2 \times 0.86 \times 3$
c $16.6 + 2.38 + 4.7$
- 19** Stacey purchased 15.4 m of fabric. She intends to make three shirts. Each shirt requires 4.25 m of fabric.
- a** How much fabric is used for making the shirts?
b What length of fabric remains?

Data investigation

1 For the scores 11, 14, 15, 19, 19, 21 find the:

a mean

b mode

c median

d range.

2 For the scores in this stem-and-leaf plot find the:

a mean

b mode

c median

d range.

Stem	Leaf
2	7 8 8
3	0 0 1 2 3 4 5 6 6
4	1 2 4 4 4 6 8
5	3 5 7 8
6	2 3

3 The back-to-back stem-and-leaf plot compares the marks gained by class A and class B in their half-yearly Mathematics exam.

a Find the mean, mode, median and range for each class.

b Which class performed better? Explain your answer.

Class B Leaf	Stem	Class A Leaf
2 1	2	8 8
6 4 2 1	3	0 3 5 6
6 5 3 1 0	4	0 2 6 6 8
1 1 0	5	3 6 9
6	6	7

4 a Complete this frequency distribution table.

b Calculate the mean correct to 1 decimal place.

Score (x)	Frequency (f)	$f \times x$
8	6	
9	11	
10	15	
11	12	
12	8	
13	7	
14	8	
	$\Sigma f =$	$\Sigma fx =$

5 Find the mode and range of each set of scores.

a

Score (x)	Frequency (f)
11	6
12	14
13	5
14	11
15	4

b

Score (x)	Frequency (f)
53	28
54	36
55	12
56	45
57	33

- 4 a Complete this frequency distribution table.
 b Calculate the mean correct to 1 decimal place.

Score (x)	Frequency (f)	$f \times x$
8	6	
9	11	
10	15	
11	12	
12	8	
13	7	
14	8	
$\Sigma f =$		$\Sigma fx =$

- 5 Find the mode and range of each set of scores.

a

Score (x)	Frequency (f)
11	6
12	14
13	5
14	11
15	4

b

Score (x)	Frequency (f)
53	28
54	36
55	12
56	45
57	33

