

## FOR THE STUDENT

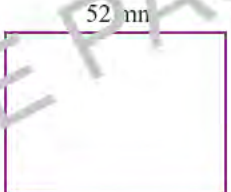
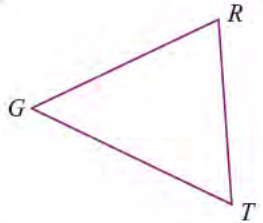
The purpose of this workbook is to provide you with an opportunity to develop your numeracy and mathematical skills in a non-calculator environment. The questions have been carefully chosen to focus on important areas that often cause difficulty for year 7 students.

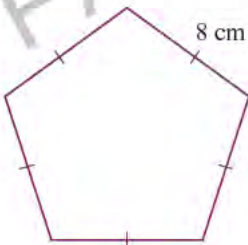
*Oxford Insight Mathematical Skills Builder* consists of 40 worksheets (one sheet for each school week), each containing 10 questions. Numeracy and mathematical skills are developed from week to week with the level of difficulty increasing as the weeks progress. The questions are designed to be answered without the use of a calculator. The structure does not follow the textbook exactly and revises some skills from earlier years as well as skills being learned and developed in your current year of schooling. It is important to complete and understand the questions each week and, to assist with that development, question types are often repeated for several weeks in a row.

When you are completely satisfied that you have done everything you can to answer the questions you should mark them from the answers at the back of the workbook. Make sure that if you get any questions wrong that you get help to do them correctly.

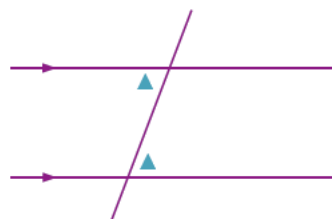
SAMPLE PAGES

## WEEK 5

- 1 Write sixteen million, three hundred and twelve thousand and seven in numerical form (as a number).
- 2 Which is greater: 4 or  $-5$ ? Why?
- 3 Evaluate  $144 \div 12$ .
- 4 Write  $\frac{10}{24}$  as a fraction in simplest form.
- 5 The numbers 1 to 10 are written on cards. How many cards have even numbers written on them?
- 6 Find the perimeter of this rectangle.  

- 7 Name this triangle.  

- 8 Give an estimate for  $1085 \div 9$ .
- 9 Convert 4300 mm to centimetres.
- 10 By adding in a different order, evaluate  $19 + 7 + 23 + 1$ .

- 1 My train departs at 7:24 am and arrives at 8:39 am. I leave home 15 min before the train departs, and it takes me 18 min to walk from the arrival station to my destination. What is the total time from when I leave home to when I arrive at my destination?
- 2 Write 2400 as a product of prime factors, in index form.
- 3 Evaluate  $126 \times 87$ .
- 4 Write 0.33 as a fraction.
- 5 Find the average of 2, 2, 5, 7 and 9.
- 6 Find the perimeter of this regular pentagon.  
A regular pentagon is shown with all five sides marked with single tick marks to indicate they are of equal length. The top-right side is labeled '8 cm'.
- 7 What number is equivalent to  $22 \times 3 \times 5$ ?
- 8 Write the next three terms in this sequence of numbers: 30, 25, 20, 15, ...
- 9 How many hectares in 500 000 m<sup>2</sup>?
- 10 By recognising that  $9 + 1 = 10$ , find  $9 \times 837 + 1 \times 837$ .

- 1 Are the marked angles corresponding, co-interior or alternate?



- 2 Write the lowest common multiple of 5 and 6.

- 3 Evaluate  $54 \div 9$ .

- 4 Write  $\frac{7}{10}$  as a percentage.

- 5 Find  $5 - 9$ .

- 6 Evaluate  $\sqrt[3]{8}$ .

- 7 Write 89 003 in words.

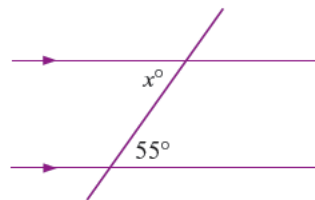
- 8 Write the next three terms in this sequence of numbers:  $-12, -8, -4, \dots$

- 9 Convert 120 g to kilograms.

- 10 Evaluate  $87 + 54 + 46 + 13$  by adding in pairs first.

SAMPLE PAGES

- 1 Find the size of  $x$ , giving a reason for your answer.



- 2 Write the lowest common multiple and highest common factor of 8 and 12.

- 3 Evaluate  $-8 \times 5$ .

- 4 Write 85% as a fraction in simplest form.

- 5 Evaluate  $2\frac{2}{7} + 3\frac{3}{7}$ .

- 6 Simplify  $5y + 2y$ .

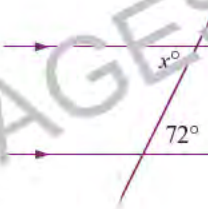
- 7 The average speed of a car is 80 km/h. How far would it travel in 5 h?

- 8 Write the next three terms in this sequence of numbers: 8, 5, 2, ...

- 9 A normal six-sided die is rolled. What is the sample space?

- 10 Estimate  $7659 \times 87$  by first rounding each number to the nearest 100.



- 1 Write 1440 as a product of prime factors, in index form.
- 2 Evaluate  $12 - (-3)$ .
- 3 Calculate the mean of 4, 5, 2, 4, 6, 7, 5, 4, 1, 8.
- 4 Calculate 10% of \$220.
- 5 In the following diagram, explain why  $x = 72$ .  

- 6 The average speed of a car is 80 km/h. How far would it travel in 3 h?
- 7 Find  $2\frac{3}{4} + 4\frac{4}{5}$ .
- 8 Evaluate  $23.568 \div 0.4$ .
- 9 A normal six-sided die is rolled. Write the probability of getting 3.
- 10 Give an estimate for  $48.95 \times 18.2 \times 31.79$ . Explain how the estimate was obtained.

## WEEK 26

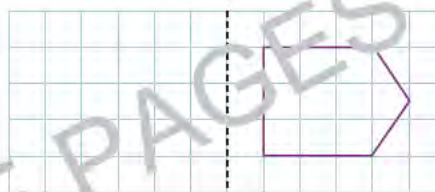
1 Given that 55 is between 49 and 64, find the two whole numbers that  $\sqrt{55}$  lies between.

2 Evaluate  $-6 + (-8) \times 1$ . (Remember order of operations.)

3 Find the value of  $3mn$ , if  $m = 4$  and  $n = -5$ .

4 Calculate 25% of \$320.

5 Reflect this shape in the line shown.



6 A train travels 120 km in 3 h. What is its average speed?

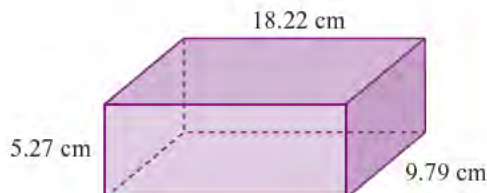
7 Find  $5\frac{7}{8} - 3\frac{5}{8}$ .

8 Evaluate  $56.23 \times 0.3$ .

9 A number is chosen at random from the numbers 1 to 20. Write the probability of a getting a number greater than 12.

10 Write five different pairs of positive fractions and mixed numerals, or decimals, that add up to 2.

- 1 Find 15% of \$240. (*Hint*: Find 10% then 5%.)
- 2 Between which two integers does  $\sqrt{74}$  lie?
- 3 Estimate the volume of this rectangular prism, to 1 significant figure. Then use a calculator to calculate the volume and compare the answer with your estimate.



- 4 The ratio of males to females at the tennis was 3 : 4. If there were 8400 people at the tennis, how many were female?
- 5 A movie starts at 1:36 pm and finishes at 1543 hours. How long is the movie? If there are 13 min of ads before the movie, and you arrive 8 min before they start and leave 5 min after the movie ends, for how long are you in your seat?
- 6 Expand and simplify:  $3(2x + 7) - 4(5x - 2)$ .

- 7 Draw the result when this shape is reflected in the line given, then rotated  $90^\circ$  clockwise about  $A$ .



- 8 Evaluate  $-4 + 3 \times (-5) - 1$ .

- 9 Find the median of the data in this stem-and-leaf plot.

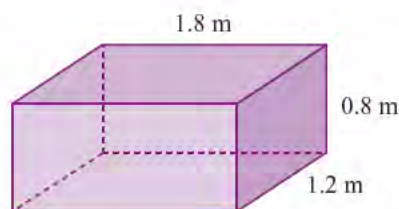
Stem	Leaf
2	0 1 5 6 6 8
3	1 1 1 2 5 9 9
4	0 0 0 5

- 10 Write ten pairs of integers that add to 5. Use a positive integer and a negative integer in each pair.



- 1 Find 10% of \$80, then 1% of \$80, and hence find 12% of \$80.
- 2 Compare an equilateral triangle and an isosceles triangle. List two similarities and two differences.

- 3 Calculate the surface area of this prism.



- 4 Divide \$800 in the ratio 3 : 1.
- 5 A card is selected at random from a normal deck of 52. What is the probability that it is a court card (king, queen or jack)?

- 6 Factorise  $30 + 6x$ .

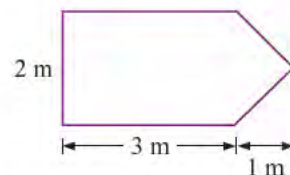
- 7 What is the order of rotational symmetry of this shape?



- 8 Evaluate  $2 \times (9 - 5) \times (-2 - 4)$ .
- 9 Draw a stem-and-leaf plot and find the range and mode of these 10 numbers:  
17, 25, 38, 43, 43, 31, 25, 37, 24, 27.
- 10 Solve  $5 + 3x = 29$ .

- Find 28% of \$60.
- Compare a rectangle and a parallelogram. List two similarities and two differences.

- Calculate the volume of the prism with base shown and height 3 m.



- Divide \$770 in the ratio 4 : 3.
- A card is selected at random from a normal deck of 52 cards. What is the probability that it is a 4 or a 5?
- Factorise  $25 + 10x$ .
- Evaluate  $1\frac{4}{5} \times 4\frac{1}{6}$ .
- Evaluate  $-3 \times (-3 + 5) \times (2 - 10)$ .

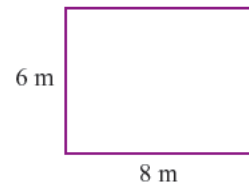
- Find the range, median and mode for the data in this stem-and-leaf plot.

Stem	Leaf
25	5 5 6 6 7 8 8 9
26	1 1 3 4 6 8
27	1 1 1 1

- Solve  $-5 - 3x = -7$ .

- 1 Find 98% of \$350.
- 2 Is a rectangle a parallelogram? Is a parallelogram a rectangle? Explain.

- 3 Calculate the volume of the prism with base shown and height 5 m.



- 4 When an amount is divided in the ratio 3 : 7, the smaller part is \$21. What is the larger part?
- 5 A container holds 8 blue and 6 red marbles. What is the probability of randomly selecting a blue or red marble?

- 6 Factorise  $-6y + 10$ .

- 7 Evaluate  $3\frac{3}{8} \div 2\frac{1}{4}$ .

- 8 Evaluate  $0.8 - 0.2 \times 1.5$ .

- 9 Find the range, mean, median and mode for this data:  
4 7 5 8 9 9 4 3 6 2 6 9 7 5 4 3 4 7 6 9

- 10 Solve  $27 = 4x - 6$ .