

Year 7 NUMERACY Calculator

Test 1 Annotated

INSTRUCTIONS TO STUDENTS



Use a 2B pencil to show your answers.



For the multiple-choice questions, show your answer by shading the matching bubble. If you make a mistake, erase the shading and shade the correct bubble.

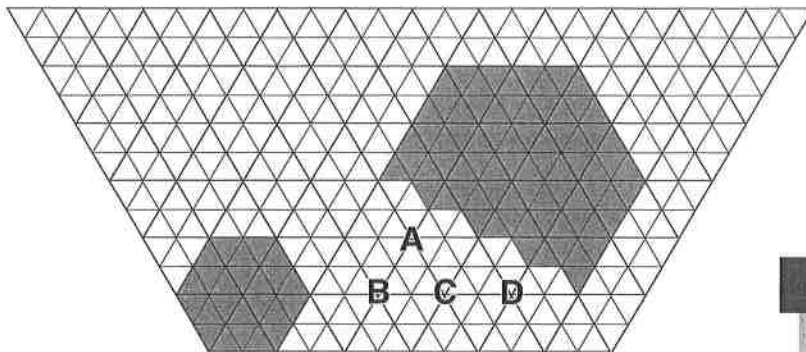


For the other questions, write your answer in the box provided. If you make a mistake, erase it and write the correct answer.

- 1 The sides of the large hexagon shown below are twice the lengths of the sides in the small hexagon.

Only part of the larger hexagon is shown.

Which of the labelled points is the last vertex of the larger hexagon?



TIP

Try shading the missing part of the large hexagon.

THINGS TO KNOW

A vertex is a corner.

A

B

C

D

- 2 When Joe follows the instructions in the flowchart and subtracts A from 18, he gets the answer 6.



What is the value of A?

3

6

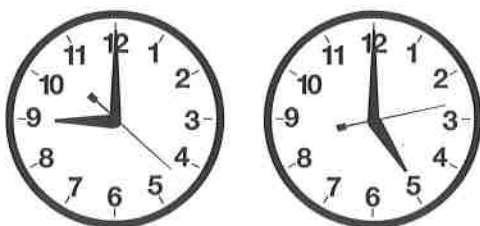
12

18

HINT

Follow the flowchart instructions to see how to get the final answer 6.

- 3 The clocks show a worker's start time in the morning and finish time in the afternoon.



HINT

Find how many hours before midday the worker starts. Then find how many hours after midday the worker finishes.

How many hours are there between the start and finish times?

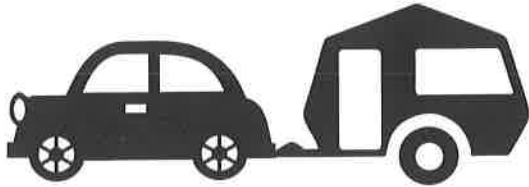
4

6

8

17

- 4 The Nabob family drove 10 000 km during their tour of Queensland. They drove for 250 hours altogether.



TRAP!

Take note of the number of zeros in each number.



What was their average speed in kilometres per hour?

25

40

250

400

- 5 This map of an island shows two signposts: → and ⚡.

Scale on map: 1 unit represents 500 m.

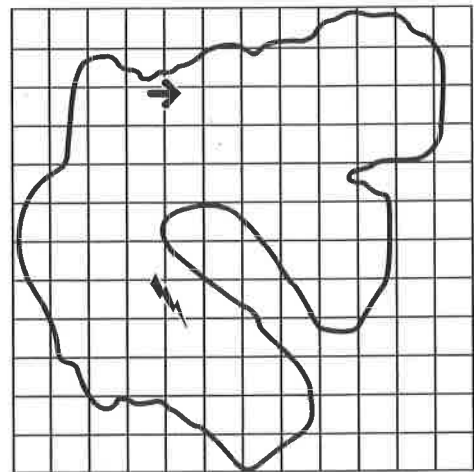
What is the actual distance between the signposts?

100 m

250 m

1 km

2.5 km



HINT

Using the scale means that you must multiply the units by 500.

- 6 3.04×12.5 is closest to:

3×12

3×13

4×12

4×13

HINT

This question is about rounding up and rounding down.

THINGS TO KNOW

Round up if the decimal digit you are rounding is 5 or more, and round down if it is less than 5.

7 A number line is shown.



Which one of the points A, B, C or D would represent $\sqrt{50}$ on the number line?

HINT

Use the calculator to find $\sqrt{50}$ first.

8 Georgio played in a basketball match.
He scored both 2-point and 3-point baskets.

He scored 21 points altogether, including three 2-point baskets.

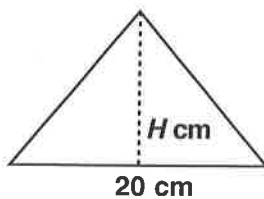
How many 3-point baskets did Georgio score?



HINT

Think about how many points are left for the 3-point baskets.

9



not to scale



The triangle and rectangle above have equal areas.

What is the value of H ?

10

20

40

80

HINT

First find the area of the rectangle.

THINGS TO KNOW

The area of a rectangle is the length multiplied by the width, and the area of a triangle is half the base multiplied by the height.

10 The lengths of four lines are given below.

Which line is the shortest?

470.5 mm

47.01 cm

0.471 m

471 mm

HINT

Convert all the lengths to the same units.

11 All the Year 7 students were allocated evenly across five classes.
There were exactly 24 students in each class.
If the students had been allocated evenly across six classes, the number of students in each class would be:



18

20

24

30

HINT

First find how many students there are altogether in Year 7.

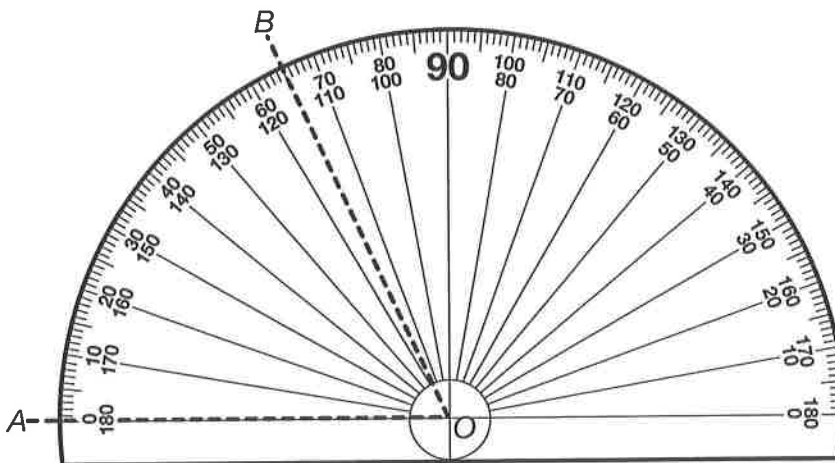
12 Find $3.1 \times 3 - 1.4 \div 2 =$

HINT

Use order of operations *BODMAS* or similar.



13



What is the size of angle AOB ?

 °

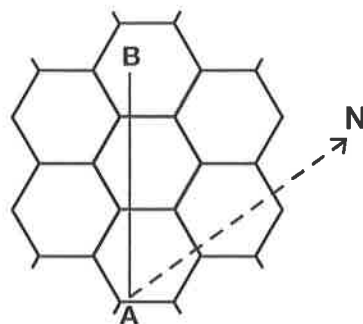
HINT

Check whether the angle is acute or obtuse.

TRAP

Make sure you use the correct scale on the protractor.

- 14 Honeycomb is made up of hexagons whose sides are of equal length.
The direction north is shown by the arrow.
Buzzy Bee walked from A to B.
In what direction did he travel?



north

north-east

north-west

south-east

HINT

Imagine the compass placed over the top of the diagram.

- 15 Elly bought 4 metres of ribbon.
The ribbon cost \$3.25 per metre.
How should Elly calculate how much change she will receive from \$20?

$\$(3.25 \times 20 + 4)$

$\$(20 - 3.25)$

$\$(20 - 4 \times 3.25)$

$\$(20 + 4 \times 3.25)$

HINT

When calculating the change from \$20, first you need to calculate how much the ribbon costs.

TRAP

Remember the correct order of operations.

16 $56 \div \bullet = 35$

What is the value of \bullet ?

$\frac{5}{8}$

$\frac{5}{7}$

$\frac{7}{5}$

$\frac{8}{5}$

THINGS TO KNOW

Remember that if you divide a number by a number greater than one, the answer will be less than the original number.

HINT

Notice that $\frac{56}{\bullet} = 35$ means $\bullet = \frac{?}{?}$ (i.e. a fraction).

17 The football club had a barbecue after the game.
They had bought 25 chops and 30 sausages.
This was not enough. They needed an extra 15 chops
and 45 sausages.



How many sausages did they need altogether?

40

55

75

115

TRAP

The question is about sausages only.

18 A netball club had 75 members last year.
There has been a 4% increase in the membership this year.

This year the number of members is:

3

72

78

105

HINT

Change 4% to a decimal or fraction.

19 Twenty families were asked how many weeks they spent on holiday last year.

The results are shown in the graph.

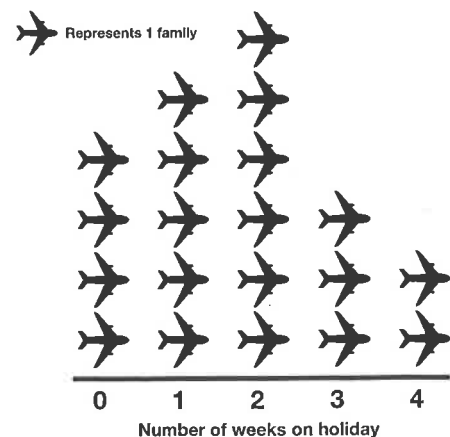
What fraction of the families spent **fewer** than 2 weeks on holiday last year?

$\frac{1}{4}$

$\frac{9}{20}$

$\frac{7}{10}$

$\frac{11}{20}$



TRAP

Before you count the number of families, check the key so you know what one symbol represents.

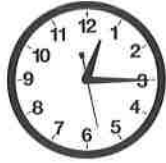
HINT

Remember, you want to find the number of families that spent fewer than 2 weeks on holiday.

20 The time in Beijing, China, is 2 hours behind the time in Sydney.
It is 12:45 pm in Sydney.

Which clock shows the time in Beijing, China?











TRAP

Think about whether the clock should read 2 hours later or 2 hours earlier.

21 Marie went for a run that lasted 1 hour 43 minutes.
She finished her run at 1 pm.



What time did she start her run?

am/pm



TRAP

Think about whether the answer is before or after 1 pm. Is it am or pm?

22 Two blocks of land are for sale.

The formula $P = \$ \left(\frac{28\,000}{770} - \frac{24\,500}{695} \right)$ can be used to find the difference in the price per square metre of the two blocks.

What is the difference in price per square metre?

\$

TRAP

Be careful of the order of operations when you use the calculator.

THINGS TO KNOW

Order of operations: BRACKETS – OF – DIVISION – MULTIPLICATION – ADDITION – SUBTRACTION.

23 These square tiles are laid along a bench.



180 tiles will be used.

What area will be covered?

100 cm²

900 cm²

4500 cm²

18 000 cm²

TIP

Check the area of one tile.



24 The mass of each packet of pasta varies a little, depending on how long the pasta machine has been running.

The masses form a number pattern.

What is the next term in the pattern?

Time	Mass (kg)
1 min	0.232
2 min	0.235
3 min	0.238
4 min	?

0.238

0.240

0.241

0.242

HINT

Work out the pattern and be careful with the place value of the digits.

25 A group of Year 7 students will travel to an athletics meeting by bus.

Each bus can seat 45 students.

The group will need 6 buses.

The number of students in the group **could not** be:

224

240

254

270



HINT

Test how many buses would be needed for each number of students.

26 Which of the following can be used to calculate the value of 95×21 ?

$3 \times 5 \times 7 \times 9$

$3^3 \times 5 \times 7$

$3 \times 5 \times 7 \times 19$

$3 \times 7 \times 9 \times 11$

HINT

Use factors and primes.

27 The table shows the speed, in kilometres per hour, for different distances (kilometres) and different times (hours).



Time (hours)	1	2	3	4	5
Distance (kilometres)	50	100	150	200	250
Speed (kilometres per hour)	50	50	50	50	50

Which of the formulae was below used to fill in the table?

- Speed = Distance + Time
- Speed = Distance - Time
- Speed = Distance \times Time
- Speed = $\frac{\text{Distance}}{\text{Time}}$

HINT

Test each formula if you don't know which one is correct.

28 The figure shown has 12 equal sides.

O is the centre of the circle drawn through each vertex of the figure.

What is the size of the angle at O?

- 15°
- 30°
- 45°
- 60°

12 equal sides



HINT

Think about the size of the angle at the centre of the circle.

THINGS TO KNOW

A full circle is equal to 360°.

29 The blocks for first (1), second (2) and third (3) place are different sizes.

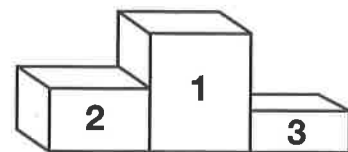
The first place block has a mass of 48 kg.

The mass of the second place block is half the mass of the first place block.

The mass of the third place block is one-third the mass of the first place block.

The whole platform weighs:

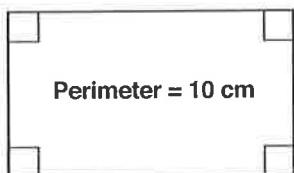
- 60 kg
- 88 kg
- 96 kg
- 148 kg



HINT

Work out the masses of the second and third place blocks.

30 The rectangle has a perimeter of 10 cm.



not to scale



Which of the following could be its area?

5 cm²

6 cm²

10 cm²

12 cm²

HINT

Try some possible lengths and widths.

THINGS TO KNOW

The perimeter of a rectangle is (length + width) doubled.

31 Sixty Year 7 boys are going on camp. They will each sleep in either a three-person or a two-person tent.

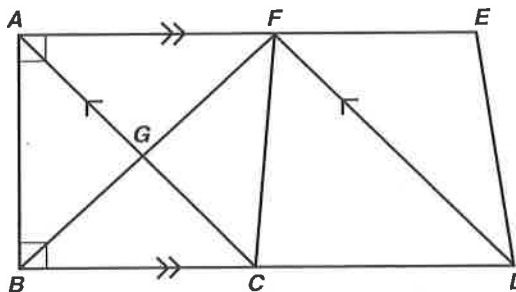


There are 16 three-person tents. How many 2-person tents will be needed?

HINT

Think about how many boys will fit in the three-person tents.

32 Name a parallelogram in the figure shown.



ABDE

FEDC

AFDC

AFCB

HINT

Think about the properties that a parallelogram must have.

THINGS TO KNOW

The symbols that indicate that lines are parallel look like this:

