

**Question 1**

Which number is forty thousand three hundred and two?

Circle the correct answer.

A 4302

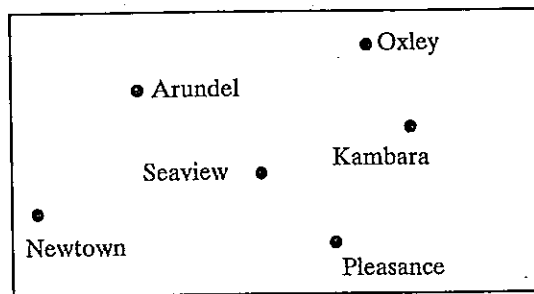
B 403002

C 40302

D 4000302

**Question 2**

The map shows the position of some of the towns in a local government area.



Which town is both North of Kambara and West of Seaview?

A Oxley

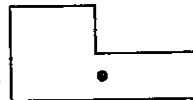
B Arundel

C Newtown

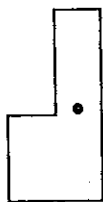
D Pleasance

**Question 3**

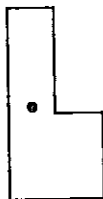
This shape turns about the dot in its centre.



What does it look like after a quarter turn in a clockwise direction?



A



B



C

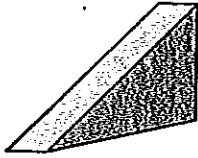


D

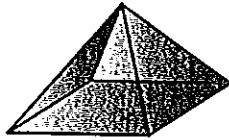
# YEAR 7 NUMERACY SAMPLE TEST 1 – NON-CALCULATOR

## Question 4

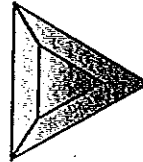
Which of these solids has the same number of faces as vertices?



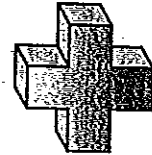
A



B



C



D

## Question 5

● = 4 and ○ = 5

● + ○ = □ + □ + □

□ =

A 2

B 3

C 4

D 5

## Question 6

What is the answer to  $2.4 \div 0.2$ ?

A 12

B 1.2

C 0.12

D 0.012

## Question 7

A bucket holds 5 yellow, 3 blue and 2 green balls. If one ball is taken from the bucket without looking, what is the chance that it is green?

A  $\frac{1}{2}$

B  $\frac{1}{3}$

C  $\frac{1}{4}$

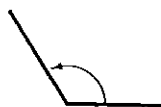
D  $\frac{1}{5}$

## Question 8

Which shows an angle of about  $120^\circ$ ?



A



B



C



D

# YEAR 7 NUMERACY SAMPLE TEST 1 – NON-CALCULATOR

## Question 9

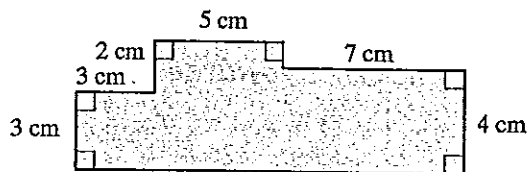
$$6 \times \square = 12 \times 7$$

What is the missing number?

Write your answer in the box.

## Question 10

What is the perimeter of this shape?



A 24 cm

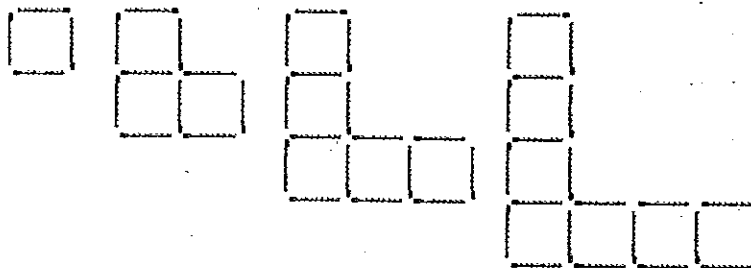
B 25 cm

C 39 cm

D 40 cm

## Question 11

Ricky is making this pattern with matches.



The table shows the number of matches needed for each shape.

Shape	1	2	3	4
Number of matches	4	10	16	22

How many matches will be needed for Shape 5?

Write your answer in the box.

# YEAR 7 NUMERACY SAMPLE TEST 1 – NON-CALCULATOR

## Question 12

Sylvie recorded the age of 50 students in this table.

What percentage of the students are 13?

Age of students	Number of students
11	7
12	16
13	
14	12
Total	50

Write your answer in the box.

 %

## Question 13

1 m and 30 mm is the same as

- A 130 m.      B 130 mm.      C 1.3 m.      D 1030 mm.

## Question 14

Which set of decimals is ordered from lowest to highest?

- A 0.4, 0.07, 0.019, 0.25  
B 0.019, 0.25, 0.4, 0.07  
C 0.019, 0.07, 0.25, 0.4  
A 0.07, 0.019, 0.4, 0.25

## Question 15

One-sixth of the area of a farm is 12 hectares. What is the area of the farm?

Write your answer in the box.

 ha

## Question 16

How many hours and minutes are between 9:47 am and 1:12 pm on the same day?

- A 3 h 25 min      B 3 h 35 min      C 4 h 25 min      D 4 h 35 min

# YEAR 7 NUMERACY SAMPLE TEST 1 – NON-CALCULATOR

## Question 17

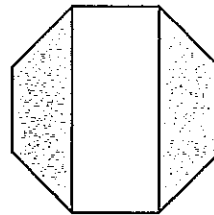
A positive number is multiplied by itself and then 7 is added. The answer is 16.

What is the number?

Write your answer in the box.

## Question 18

A regular octagon is cut into 3 pieces like this:



The central piece is a rectangle.

Each of the other two pieces is a

- A rectangle      B hexagon      C trapezium      D rhombus

## Question 19

The average (mean) of six numbers is 4.

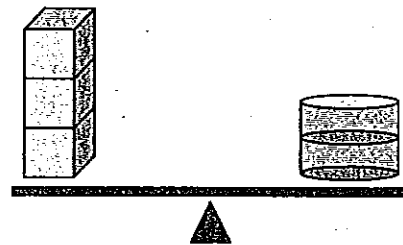
When one of the numbers is left out the average changes to 3.

What number is left out?

- A 3      B 4      C 7      D 9

## Question 20

This balance shows that 3 blocks have the same mass as 2 discs.



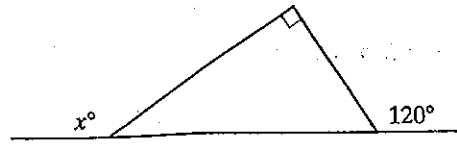
How many blocks would balance 6 discs and 1 block?

- A 8      B 9      C 10      D 11

# YEAR 7 NUMERACY SAMPLE TEST 1 – NON-CALCULATOR

## Question 21

What is the value of  $x$  in this diagram?



A 150

B 140

C 130

D 120

## Question 22

Which fraction has the same value as  $3\frac{2}{5}$ ?

A  $\frac{11}{5}$

B  $\frac{17}{5}$

C  $\frac{16}{5}$

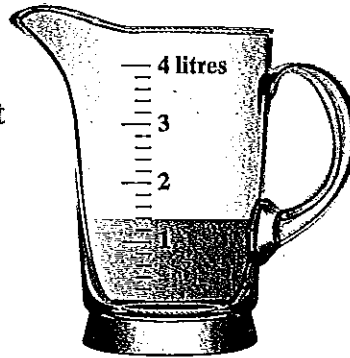
D  $\frac{18}{5}$

## Question 23

This jug has some juice in it.

From the jug, Gina fills two glasses that each hold 250 mL.

How much juice will be left in the jug?



Write your answer in the box.

 mL

## Question 24

Lee put 8 pencils on each of 7 desks. He had 4 pencils left over. He wants to put 12 pencils on each of the desks.

How many more pencils does he need?

Write your answer in the box.

## Question 25

The temperature at 6 am was  $-12^\circ\text{C}$ . It was  $5^\circ\text{C}$  warmer at 8 am. What was the temperature at 8 am?

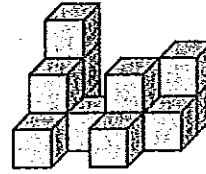
Write your answer in the box.

  $^\circ\text{C}$

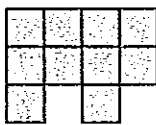
# YEAR 7 NUMERACY SAMPLE TEST 1 – NON-CALCULATOR

## Question 26

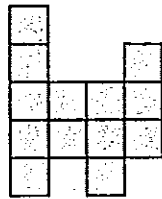
Xanthe made a 3D object using 13 identical cubes.



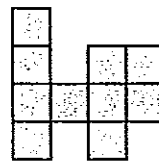
What is the view from the top?



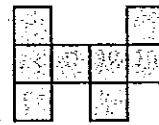
A



B



C



D

## Question 27

What fraction is halfway between  $\frac{2}{5}$  and  $\frac{3}{5}$ ?

Write your answer in the box.

## Question 28

There are 600 people at the showground. One-third of the people are competitors and the rest are spectators. 40% of the spectators are children.

How many children are spectators at the showground?

A 24

B 80

C 160

D 240

## Question 29

$\square$  and  $\triangle$  stand for numbers that are related by a rule.

What is the rule?

$\square$	2	3	5	8
$\triangle$	1	6	22	61

A  $\triangle = 5 \times \square - 9$

B  $\triangle = 3 \times \square - 5$

C  $\triangle = \square \times \square - 3$

D  $\triangle = 5 \times \square \times \square - 19$

# YEAR 7 NUMERACY SAMPLE TEST 1 — NON-CALCULATOR

## Question 30

The area of a square is 64 square metres.

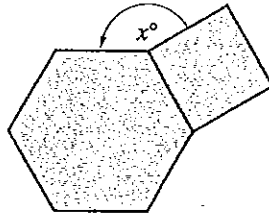
What is the perimeter of the square?

Write your answer in the box.

 m

## Question 31

The diagram shows a regular hexagon and a square.



What is the value of  $x$ ?

Write your answer in the box.

## Question 32

The ratio of men to women at a conference was 5 to 3. There were 40 people at the conference. Later, 15 more men and 5 more women joined the conference.

What is the ratio of men to women now?

A 2 to 1

B 3 to 1

C 3 to 2

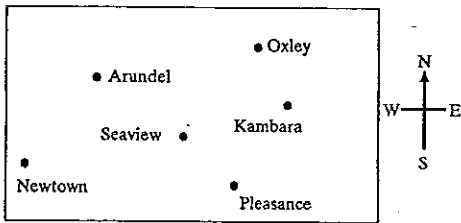
D 5 to 3

**END OF TEST 1**



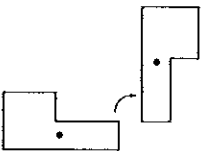
- 1 C (Basic level)
- 2 B (Basic level)
- 3 D (Basic level)
- 4 B (Basic level)
- 5 B (Basic level)
- 6 A (Intermediate level)
- 7 D (Intermediate level)
- 8 B (Intermediate level)
- 9 14 (Basic level)
- 10 D (Basic level)
- 11 28 (Intermediate level)
- 12 30% (Advanced level)
- 13 D (Intermediate level)
- 14 C (Intermediate level)
- 15 72 ha (Intermediate level)
- 16 A (Intermediate level)
- 17 3 (Intermediate level)
- 18 C (Basic level)
- 19 D (Intermediate level)
- 20 C (Intermediate level)
- 21 A (Advanced level)
- 22 B (Intermediate level)
- 23 900 mL (Intermediate level)
- 24 24 (Intermediate level)
- 25 -7°C (Advanced level)
- 26 D (Intermediate level)
- 27 1/2 (Advanced level)
- 28 C (Advanced level)
- 29 C (Advanced level)
- 30 32 m (Advanced level)
- 31 150 (Advanced level)
- 32 A (Advanced level)

- Forty thousand is 40000.  
 $40000 + 300 + 2 = 40302$
- The towns North of Kambara are Oxley and Arundel. The towns West of Seaview are Arundel and Newtown.



The town that is both North of Kambara and West of Seaview is Arundel.

- The shape turns through 90 degrees in a clockwise direction.



The correct option is D.

- Consider the options:



A is a triangular prism. It has 5 faces and 6 vertices. It does not have the same number of faces and vertices.

B is a rectangular pyramid. It has 5 faces and 5 vertices. It does have the same number of faces and vertices. The correct option is B.

5 ● = 4 and ○ = 5

● + ○ = 4 + 5 = 9

So □ + □ + □ = 9

This means □ = 3 because 3 + 3 + 3 = 9.

6  $2.4 \div 0.2 = 24 \div 2 = 12$

7 Number of balls = 5 + 3 + 2 = 10

2 out of 10 balls are green.

Chance of a green ball =  $\frac{2}{10} = \frac{1}{5}$

- An angle of 90° is a right angle and an angle of 180° is a straight angle. An angle of 120° is larger than a right angle but smaller than a straight angle. It is nearer in size to a right angle than a straight angle. The angle that measures closest to 120° is B.

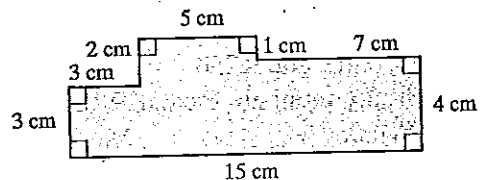


9  $6 \times \square = 12 \times 7$

The first number (6) has been doubled so the second number (□) must have halved to give the same product.

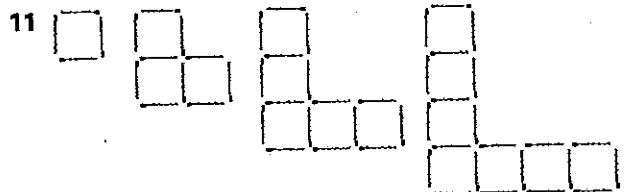
So □ =  $2 \times 7 = 14$

- Two measurements are not shown on the diagram.



The total of the top measurements is 15 cm so the bottom must also be 15 cm. The total left side is 5 cm so the total right side must also be 5 cm.

Perimeter =  $2 \times (15 + 5)$  cm  
=  $2 \times 20$  cm  
= 40 cm



Shape	1	2	3	4
Number of matches	4	10	16	22

The pattern for the number of matches is 4, 10, 16, 22, ...

The numbers are increasing by 6 each time. The next number is  $22 + 6 = 28$ .

So 28 matches will be needed for Shape 5.

- 12 The number of 13-year-old students is missing.

Age of students	Number of students
11	7
12	16
13	
14	12
Total	50

$$\begin{aligned} \text{Total of other ages} &= 7 + 16 + 12 \\ &= 35 \end{aligned}$$

$$\begin{aligned} \text{Number of 13-year-old students} &= 50 - 35 \\ &= 15 \end{aligned}$$

$$\begin{aligned} \text{Fraction of 13-year-olds} &= \frac{15}{50} \\ &= \frac{30}{100} \\ &= 30\% \end{aligned}$$

So the percentage of students who are 13 is 30%.

- 13  $1 \text{ m} = 1000 \text{ mm}$

$$\begin{aligned} 1 \text{ m} + 30 \text{ mm} &= (1000 + 30) \text{ mm} \\ &= 1030 \text{ mm} \end{aligned}$$

- 14 Rewrite the decimals with the same number of places after the decimal point:

0.400, 0.070, 0.019 and 0.250.

So, in order, the numbers are 0.019, 0.070, 0.250 and 0.400:

The set of decimals that is ordered from lowest to highest is 0.019, 0.07, 0.25, 0.4.

- 15 One-sixth of the area = 12 ha

$$\begin{aligned} \text{Area} &= 6 \times 12 \text{ ha} \\ &= 72 \text{ ha} \end{aligned}$$

- 16 From 9:47 am until 12:47 pm is 3 hours.

From 12:47 pm until 1 pm is 13 minutes.

From 1 pm until 1:12 pm is 12 minutes.

Total time = 3 h 25 min

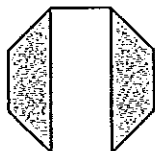
- 17 After 7 was added the answer was 16.

Before 7 was added the answer was  $16 - 7$  or 9.

$$\text{Now } 3 \times 3 = 9$$

So the number was 3.

- 18 Each of the two pieces has 4 sides so each is a quadrilateral. Each has one pair of opposite sides that are parallel. Each of the shapes is a trapezium.



- 19 The average of 6 numbers is 4.

$$\begin{aligned} \text{Sum of the 6 numbers} &= 6 \times 4 \\ &= 24 \end{aligned}$$

The average of 5 numbers is 3.

$$\begin{aligned} \text{Sum of the 5 numbers} &= 5 \times 3 \\ &= 15 \end{aligned}$$

$$\begin{aligned} \text{Difference in sums} &= 24 - 15 \\ &= 9 \end{aligned}$$

So the number that was left out was 9.

- 20 Every 2 discs balance 3 blocks.

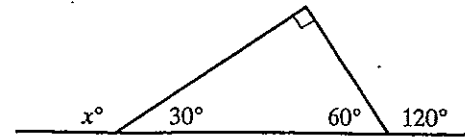
So  $3 \times 2$  discs will balance  $3 \times 3$  blocks.

So 6 discs balance 9 blocks.

6 discs and 1 block will balance 10 blocks.

- 21 Angles in a straight line add to  $180^\circ$ .

So the angle that forms a straight line with the angle of  $120^\circ$  must measure  $60^\circ$ .



The exterior angle of a triangle is equal to the sum of the interior opposite angles.

$$\text{So } x = 90 + 60$$

$$x = 150$$

$$\begin{aligned} 22 \quad 3\frac{2}{5} &= \frac{3 \times 5 + 2}{5} \\ &= \frac{17}{5} \end{aligned}$$

- 23 There are 5 divisions between each litre in the scale on the jug.



$$\text{Each division} = 1 \text{ L} \div 5$$

$$= 1000 \text{ mL} \div 5$$

$$= 200 \text{ mL}$$

So the jug held 1400 mL of juice.

$$\text{Amount removed} = 2 \times 250 \text{ mL}$$

$$= 500 \text{ mL}$$

$$\text{Amount remaining} = (1400 - 500) \text{ mL}$$

$$= 900 \text{ mL}$$

- 24 Number of pencils =  $8 \times 7 + 4$

$$= 56 + 4$$

$$= 60$$

$$\text{Total number needed} = 12 \times 7$$

$$= 84$$

$$\text{Extra needed} = 84 - 60$$

$$= 24$$

- 25 At 6 am the temperature was  $12^\circ$  below zero.

At 8 am the temperature was  $5^\circ$  warmer.

As  $12 - 5 = 7$ , the temperature was  $7^\circ$  below zero at 8 am.

The temperature was  $-7^\circ\text{C}$

- 26 There are 13 cubes altogether.



5 cubes can be seen in the top and middle rows so there can only be 8 cubes in the bottom row.

So the view from the top must be D.



$$27 \quad \frac{2}{5} = \frac{4}{10}$$

$$\text{and } \frac{3}{5} = \frac{6}{10}$$

$$\text{Number halfway between } \frac{4}{10} \text{ and } \frac{6}{10} = \frac{5}{10} \\ = \frac{1}{2}$$

So the number halfway between  $\frac{2}{5}$  and  $\frac{3}{5}$  is  $\frac{1}{2}$ .

28 One-third of 600 people are competitors.

$$\text{Number of competitors} = 600 \div 3 \\ = 200$$

$$\text{Number of spectators} = 600 - 200 \\ = 400$$

$$\text{Number of spectators who are children} \\ = 40\% \text{ of } 400 \\ = \frac{40}{100} \times 400 \\ = 160$$

29 Consider the options:

$\square$	2	3	5	8
$\Delta$	1	6	22	61

$$\Delta = 5 \times \square - 9$$

$$\text{When } \square = 2,$$

$$\Delta = 5 \times 2 - 9$$

$$= 10 - 9$$

$$= 1 \quad \checkmark$$

$$\text{When } \square = 3,$$

$$\Delta = 5 \times 3 - 9$$

$$= 15 - 9$$

$$= 6 \quad \checkmark$$

$$\text{When } \square = 5,$$

$$\Delta = 5 \times 5 - 9$$

$$= 25 - 9$$

$$= 16 \quad \times$$

The rule is not  $\Delta = 5 \times \square - 9$ .

$$\Delta = 3 \times \square - 5$$

$$\text{When } \square = 2,$$

$$\Delta = 3 \times 2 - 5$$

$$= 6 - 5$$

$$= 1 \quad \checkmark$$

$$\text{When } \square = 3,$$

$$\Delta = 3 \times 3 - 5$$

$$= 9 - 5$$

$$= 4 \quad \times$$

The rule is not  $\Delta = 3 \times \square - 5$ .

$$\Delta = \square \times \square - 3$$

$$\text{When } \square = 2,$$

$$\Delta = 2 \times 2 - 3$$

$$= 4 - 3$$

$$= 1 \quad \checkmark$$

$$\text{When } \square = 3,$$

$$\Delta = 3 \times 3 - 3$$

$$= 9 - 3$$

$$= 6 \quad \checkmark$$

$$\text{When } \square = 5,$$

$$\Delta = 5 \times 5 - 3$$

$$= 25 - 3$$

$$= 22 \quad \checkmark$$

$$\text{When } \square = 8,$$

$$\Delta = 8 \times 8 - 3$$

$$= 64 - 3$$

$$= 61 \quad \checkmark$$

The rule is  $\Delta = \square \times \square - 3$ .

30 Area =  $64 \text{ m}^2$ .

$$\text{Now } 64 = 8 \times 8$$

So each side of the square is 8 m.

$$\text{Perimeter} = 4 \times 8 \text{ m}$$

$$= 32 \text{ m}$$

31 Each angle of a square =  $90^\circ$

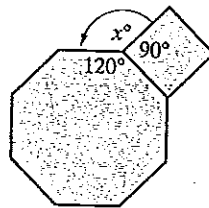
$$\text{Angle sum of a hexagon} = (6 - 2) \times 180^\circ$$

$$= 4 \times 180^\circ$$

$$= 720^\circ$$

Each angle of a regular hexagon =  $720^\circ \div 6$

$$= 120^\circ$$



Angles at a point add to  $360^\circ$ .

$$\text{So } x + 120 + 90 = 360$$

$$x + 210 = 360$$

$$x = 360 - 210$$

$$= 150$$

32 There were 5 men for every 3 women.

So out of every 8 people, 5 were men.

Now  $5 \times 8 = 40$  so there were 5 lots of 8 people attending the conference.

$$\text{Number of men} = 5 \times 5$$

$$= 25$$

$$\text{Number of women} = 3 \times 5$$

$$= 15$$

$$\text{New number of men} = 25 + 15$$

$$= 40$$

$$\text{New number of women} = 15 + 5$$

$$= 20$$

New ratio of men to women = 40 to 20

$$= 2 \text{ to } 1$$