11+

Practice Test

Set B: Paper 2

Read the following:

Do not open this booklet or start the test until you are told to do so.

1. This test can be taken in either multiple-choice or write-in format.
2. If you are taking it as a multiple-choice test you should mark your answer to each question in pencil on the separate answer sheet. Mark the correct box quickly and neatly using a horizontal line.
3. If you are taking it as a write-in test you should write your answer to each question in pencil on the paper. Write your answer carefully in the space provided or, if there is a range of options, mark the correct box quickly and neatly using a horizontal line.
4. If you make a mistake, rub it out and mark your new answer clearly.
5. There are three sections in this test.
6. The time allowed for each section is given at the start of that section. You will have a total of 45 minutes to complete the timed sections of the test.
7. Each section includes examples showing you how to answer the questions. You may refer to these examples at any time as you work through the section.
8. Do as many questions as you can. For some questions you will be given a range of options — if you get stuck on one of these questions, choose the answer that you think is most likely to be correct, then move on to the next question. If you get stuck on a question for which no options are given, leave it and move on to the next question. If you have time at the end of the section, go back and have another go at the questions you could not answer.
9. You should do any rough working on a separate piece of paper.

Work carefully, but go as quickly as you can.

SECTION 3: NUMERICAL REASONING

EXAMPLES EXAMPLES EXAMPLES EXAMPLES EXAMPLES EXAMPLES

READ THESE EXAMPLE QUESTIONS. YOU MAY RETURN TO THESE EXAMPLES AT ANY TIME AS YOU WORK THROUGH THIS SECTION.

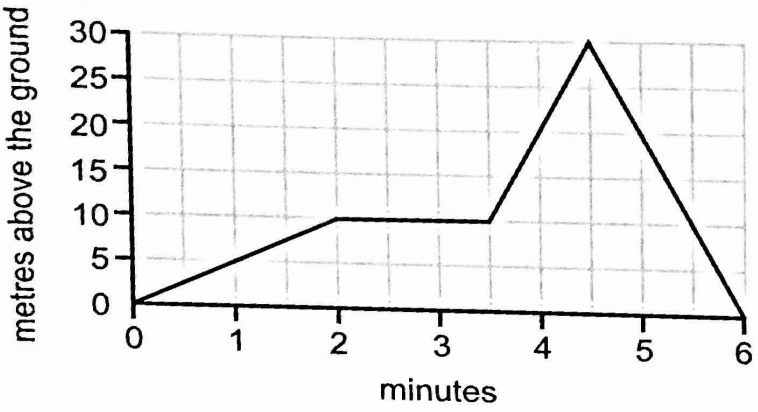
A Which of the following fractions is largest: $\frac{1}{5}$ $\frac{2}{5}$ $\frac{3}{5}$ $\frac{4}{5}$

☐ ☐ ☐ ■

B Michelle bought a book for £6.99 and a pen for 76p.
How much did she spend?

£ 7 . 7 5

C George draws a graph showing a flight by his remote-control model plane.



C1 How long did the flight last?

6 minutes

C2 How high was the plane after 4 minutes of flight?

2 0 m

C3 According to the graph, what was the plane doing between 3½ and 4½ minutes of flight?

speeding up	rising	slowing down	falling
☐	■	☐	☐

WAIT UNTIL YOU ARE TOLD TO GO ON

YOU HAVE 35 MINUTES TO COMPLETE THIS SECTION

THIS SECTION CONTAINS SINGLE-PART AND MULTI-PART QUESTIONS. THERE ARE 23 QUESTIONS IN THIS SECTION

1 Mount Etna is 3350 m tall. Mount Fuji is 3776 m tall.

What is the difference in their heights?

☐☐☐☐ m

2 Which of the following is most suitable to use when measuring the depth of a swimming pool?

millilitres ☐ litres ☐ kilograms ☐ metres ☐ kilometres ☐

3 Mia divides a number by 8. Which of these could be the remainder?

6 ☐ 9 ☐ 8 ☐ 11 ☐ 10 ☐

4 Some money is being split equally between 25 people.

What percentage will each of them receive?

2% ☐ 20% ☐ 5% ☐ 4% ☐ 25% ☐

5 At Keith's Clothes Shop, a tie costs £2.50 and a shirt costs £17.50.

a) How much does it cost to buy 8 ties and 8 shirts?

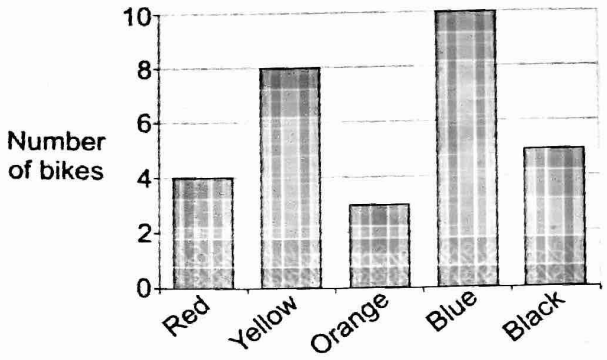
£☐☐☐.☐☐

b) Richard buys two shirts and some ties. He spends exactly £50.
How many ties does he buy?

☐☐

GO TO THE NEXT QUESTION ⇨

6 The colours of all the bikes outside an office one day were recorded and put into this chart.



a) What was the most common bike colour?

Red ☐ Yellow ☐ Orange ☐ Blue ☐ Black ☐

b) What percentage of the bikes were orange?

☐☐ %

c) What was the ratio of red bikes to blue bikes?
Write your answer in its simplest form.

☐☐ : ☐☐

d) Anders is drawing a pie chart to show the data.
What size angle should he use for the 'Red' sector?

☐☐☐ °

7 Peter has a jug that contains 2 litres of water.
He fills glasses by pouring 300 ml from the jug into each glass.

How many glasses can he fill?

☐☐

8 Greg runs a game stall at a fair where players have to throw a ball through a hoop. On one day, 400 balls were thrown, and 35% of them went through the hoop.

a) What fraction of the balls went through the hoop on this day?

$\frac{7}{20}$ ☐ $\frac{4}{10}$ ☐ $\frac{3}{10}$ ☐ $\frac{7}{35}$ ☐ $\frac{5}{7}$ ☐

b) How many balls went through the hoop on this day?

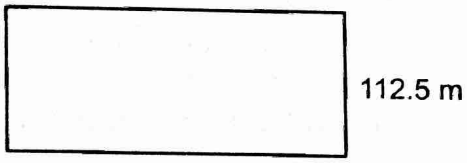
☐☐☐

It costs 50p per ball to play the game. If the ball goes through the hoop, the player wins a prize worth £1.

c) How much profit did Greg make on this day?

£☐☐☐.☐☐

9 Jacob jogs around the edge of a park, which is in the shape of a rectangle. The diagram below shows the outline of the park.



In total, he jogs 14 750 m.

a) How many times does he jog around the park to cover this distance?

☐☐☐

b) Jacob's uncle sponsors him £12.50 for the run.
How much is this per lap?

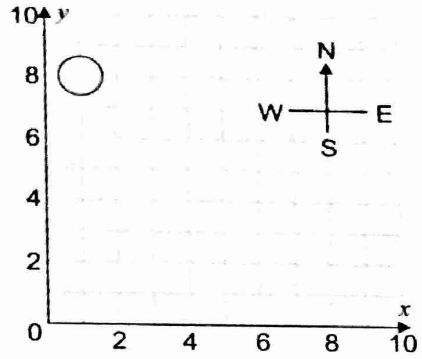
£☐☐.☐☐

c) Jacob jogs at a constant rate of 1 km every 8 minutes.
How long does it take him to run 14 750 m?

☐☐ hour(s) ☐☐ minute(s)

GO TO THE NEXT QUESTION ⇨

10 Pierre places a counter at the point (1, 8), as shown.



He moves the counter 3 squares south, 4 squares east, and another 2 squares south.

a) What is the counter's new position?

(☐☐, ☐☐)

Pierre then moves the counter from its new position to the point (2, 1).

b) How many squares in each direction does he move the counter to do this?

☐☐ squares west, ☐☐ squares south

c) What is the minimum number of squares the counter now needs to be moved so that it ends up in a position which is south east of its original starting position?
The counter can only be moved along the grid lines.

☐☐ squares

11 A cube has sides of length 3 cm.
Two of these cubes are stuck together to make a cuboid.

What is the volume of the cuboid?

☐☐☐ cm^3

12 Three women start a long-distance running race at 9 am.
The timetable shows the times at which they each passed through checkpoints A-E, before finishing at point F.

	Ruby	Sara	Trish
A	09:15	09:14	09:16
B	09:52	09:48	09:55
C	10:58	10:48	11:00
D	12:01	12:00	12:11
E	12:46	12:49	13:16
F	14:04	14:10	14:41

a) How long after Sara did Trish pass checkpoint E?

☐☐ minutes

b) How long did it take Ruby to get from checkpoint B to the finish?

☐☐ hour(s) ☐☐ minute(s)

c) How much longer did it take Trish to run the race than Ruby?

☐☐ minute(s)

13 Rachel and Sam win £75 between them.
Rachel gets £15 more than Sam.

a) How much does Sam get?

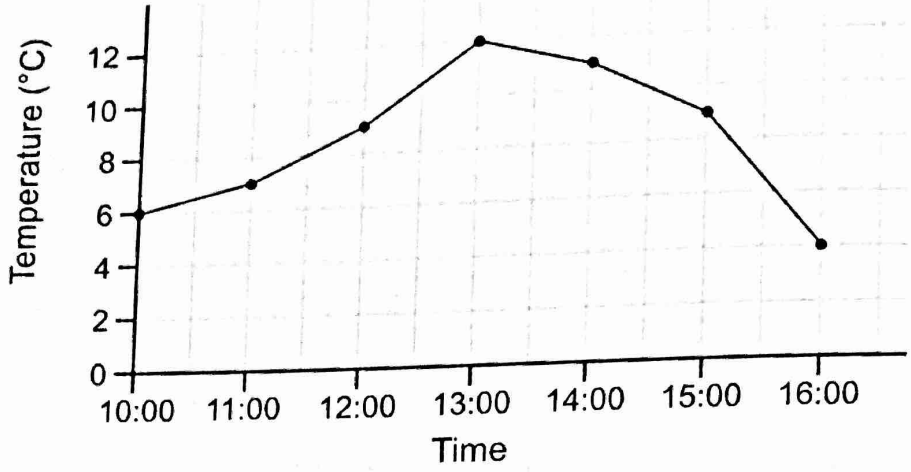
£☐☐.☐☐

b) What is the ratio of the amount that Sam gets to the amount that Rachel gets?
Write your answer in its simplest form.

☐☐ : ☐☐

GO TO THE NEXT QUESTION

14 The temperature was recorded every hour between 10:00 and 16:00 one day.
The results are shown in the graph below.



a) What was the temperature at 11:00?

☐☐ °C

b) What time had the coldest recorded temperature?

☐☐ : ☐☐

c) Between which two times was the change in temperature the greatest?

10:00-11:00	11:00-12:00	12:00-13:00
☐	☐	☐
13:00-14:00	**14:00-15:00**	**15:00-16:00**
☐	☐	☐

d) What was the mean temperature recorded from 10:00 to 14:00?

☐☐ °C

15 Mr Alokwe changes his car every 3 years. Mr Clitheroe changes his car every 2 years.
They both changed their cars in the year 2014.

What will be the next year when they both change their cars?

☐☐☐☐

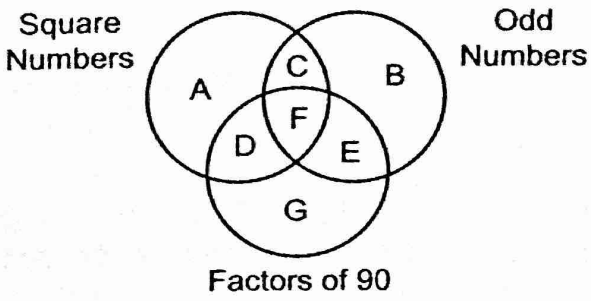
(16) Karen has several pets.

$\frac{5}{8}$ of her pets are guinea pigs and $\frac{1}{3}$ are cats.

Her only other pet is one canary.

How many pets does she have in total?

(17) Look at the Venn diagram shown below.



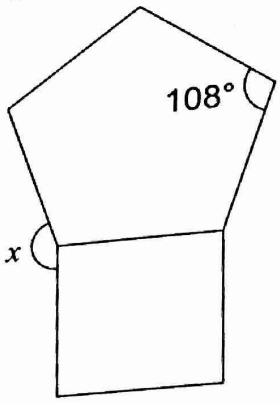
a) In which of the lettered sections A-G would you put the number 49?

A	B	C	D	E	F	G
▭	▭	▭	▭	▭	▭	▭

b) What is the largest value that could be sorted into section F?

c) The numbers 1 to 10 are sorted into the Venn diagram.
How many numbers won't be sorted into any of the sections A-G?

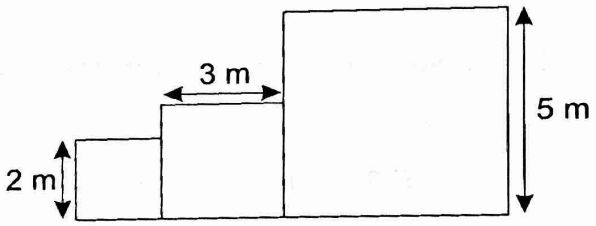
18 The diagram shows a regular pentagon and a square with the same side length.



What is the size of angle x?

162° ☐ 108° ☐ 198° ☐ 72° ☐ 156° ☐

19 Sandra joins three squares together to make the shape below.



a) What is the perimeter of this shape?

☐☐☐ m

b) What is the area of this shape?

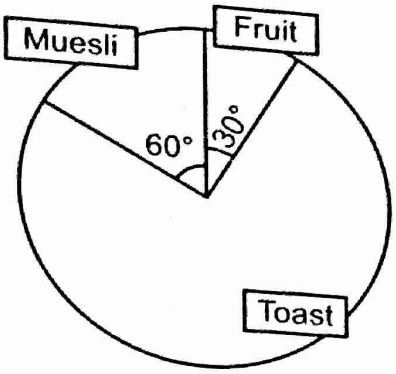
☐☐☐ m^2

Sandra continues the sequence by adding squares to the shape.
The fourth square has side length 8 m and the fifth square has side length 12 m.

c) What is the side length of the seventh square?

☐☐ m

20 The pie chart shows what the members of a chess club had for breakfast.



Each person had exactly one of these three options.

a) What is the angle of the 'Toast' sector?

□□□°

b) 12 people had either fruit or muesli for breakfast.
How many people are there in the chess club altogether?

□□□

c) How many people had toast for breakfast?

□□□

d) What fraction of the people in the chess club had fruit?

$\frac{1}{8}$ ☐ $\frac{1}{5}$ ☐ $\frac{1}{10}$ ☐ $\frac{1}{12}$ ☐ $\frac{1}{6}$ ☐

21 A cleaner charges £10 per visit, plus £7.50 per hour.

a) Which expression gives the cost in pounds of hiring the cleaner for h hours?

$7.5h$ ☐ $10h + 7.5$ ☐ $7.5 + h$ ☐ $10 + 7.5h$ ☐ $10h + 7.5h$ ☐

b) Jasmine pays for a cleaner to clean her house.
The cleaner works for 3 hours. How much does this cost?

£□□.□□

GO TO THE NEXT QUESTION

22 A horse racing club holds regular races over the course of a season. The table shows the number of races won by each of the five jockeys competing last season. The mean number of races won was 12.

Name	Number of races won
Terry	6
Alf	33
Glenn	14
Roy	7
Steve	?

a) How many more races did Alf win than Glenn?

b) How many races did Steve win?

c) What fraction of the total number of races was won by Alf?

$\frac{1}{2}$ ☐ $\frac{2}{5}$ ☐ $\frac{11}{20}$ ☐ $\frac{8}{15}$ ☐ $\frac{17}{30}$ ☐

23 Krupa thinks of a number, n. She adds four, multiplies by seven, then subtracts twelve.

a) If the result is 23, what number did she start with?

b) Which of the following expressions correctly shows Krupa's operations?

$(n \times 7) + 4 - 12$ ☐ $n + 4 \times (7 - 12)$ ☐ $(n + 4) \times 7 - 12$ ☐

$n - 12 \times 7 + 4$ ☐ $n + 4 \times 7 - 12$ ☐

STOP — YOU MAY CHECK YOUR ANSWERS IN THIS SECTION ONLY