OCR
Oxford Cambridge and RSA

Mock Test Papers - Paper2 - Test3

Paper 2 (Foundation Tier)
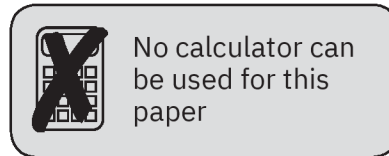
F

Time allowed: 1 hour 30 minutes

You may use:
• geometrical instruments • tracing paper

Do not use:
• a calculator

X No calculator can be used for this paper

Please write clearly in black inkDo not write in the barcodes.

Centre number [ ][ ][ ][ ][ ]   Candidate number [ ][ ][ ][ ]

First name(s) ◆ _____

Last name ◆ _____

INSTRUCTIONS

• Use black ink. You can use an HB pencil, but only for graphs and diagrams.
• Write your answer to each question in the space provided.
  If you need extra space, use the lined pages at the end of this booklet.

 The question numbers must be clearly shown.
  • Answer all the questions.
• Where appropriate, your answer should be supported with working.
  Marks might be given for using a correct method, even if your answer is wrong.

INFORMATION
 • The total mark for this paper is **100**.
 • The marks for each question are shown in brackets [ ].
This document consists of 20 pages.

Answer all the questions.

1   Work out.

(a) − 6 + 11

(a) .... [1]

(b) 23 + 16 ÷ 8

(b) .... [1]

2 (a) Work out
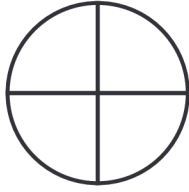
$$\frac{4}{7} + \frac{6}{9}$$

(a) .... [2]

(b) Work out, giving your answer as a fraction in its simplest form.

$$\frac{5}{7} \times \frac{21}{80}$$

(b) .... [2]

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3 (a) Shade $\frac{1}{2}$ of this circle

[1]

(b) What percentage of this shape is shaded?
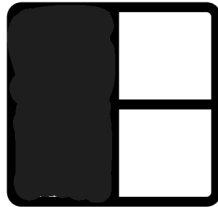
(b) .... [1]

4 (a) Maya invests £1,000 at a rate of 5% per year simple interest.
Work out the interest Maya receives after one year.

(a) £... [2]

(b) Work out the value of Maya's investment after 4 years.

(b) £... [2]

Turn over

Prepare 4 GCSEs

5 (a) Write 0.19 as a fraction in its simplest form.

(a) .... [2]

(b) Write $\dfrac{8}{50}$ as a decimal.

(b) .... [2]

6 (a) Simplify $\dfrac{8b^9}{2b^3}$

(a) .... [1]

(b) $(x^5)^5$

(b) .... [1]

7 This is Liam's bar chart to show the number of points scored by four players during December.
The bar chart below shows the results.
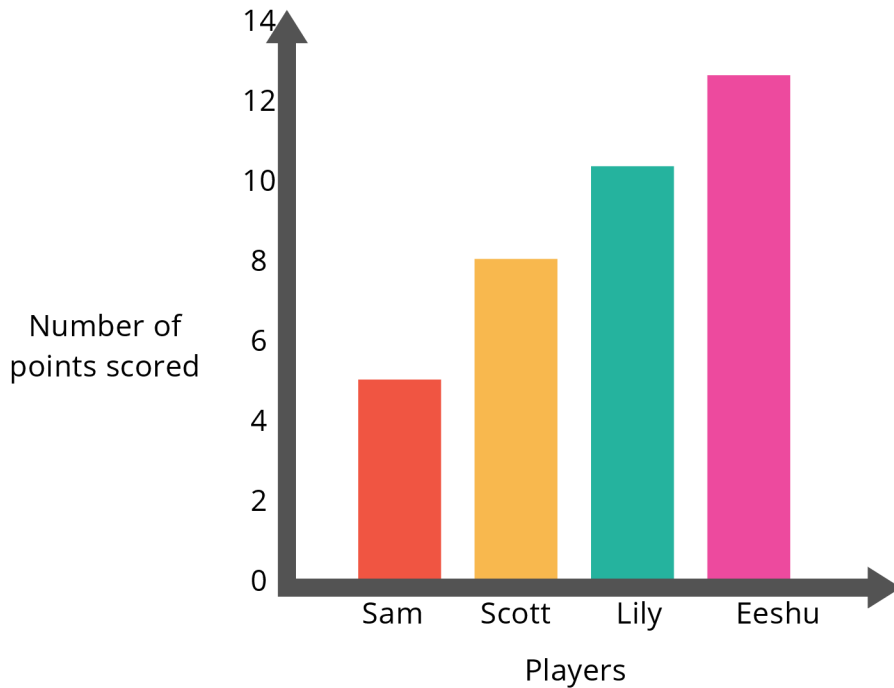
(a) Emma says:
Liam's bar chart shows that Scott scored twice as many points as Sam.
Is Emma correct?
Give a reason for your answer.

.... because ....
.... [1]

(b) Give one way in which Liam can improve his bar chart.
....
.... [1]

(c) Tiana says:
Out of these four players, Eeshu achieved the highest mean number of points per game
during December.
What assumption has Tiana made?

....
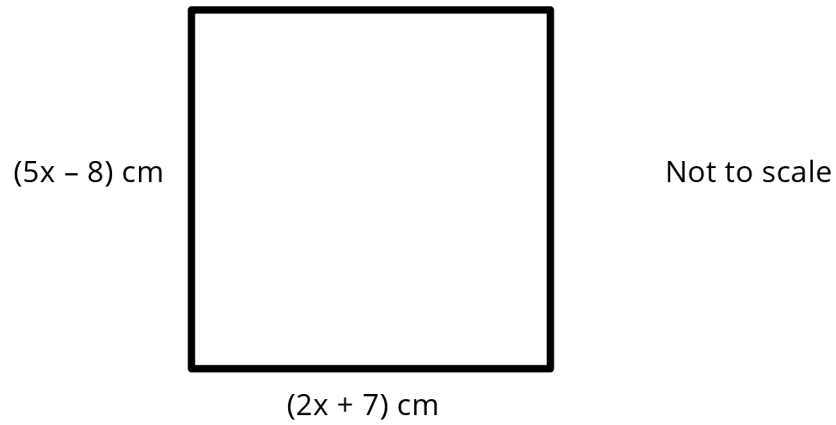.. [1]

8 (a) A pair of shoes has its price reduced by 25% in a sale.
The sale price is £45.
Work out the price of the shoes before the sale.

(a).. [3]

(b) Work out $\sqrt[3]{64} \times 8^2$

(b) .... [3]

9 (a) The diagram shows a square

(5x – 8) cm

Not to scale

(2x + 7) cm

By setting up and solving an equation, show that the perimeter of the square is

numerically equal to the area of the square.

.... [6]

10   (a) Simplify.

6a - 3b + 5a +7b

(a) .... [2]

(b) (i) Multiply out.

5 (x + 9)

(b)(i) .... [1]

(ii) Multiply out and simplify

(x + 6) (x - 9)

(ii) .... [2]

11   A bell rings every 15 minutes.

A siren sounds every 10 minutes.

The bell and the siren go off together at 09:00.

How many times between 09:01 and 13:00 will the bell ring and the siren sound together?

Show your working.

.... [5]

13 (a) Solve the simultaneous equations.

$$4x + 7y = 18$$
$$5x + 3y = 11$$

x = ...
y = ... [4]

13. (b) AOB is a sector of a circle, centre O.

Not to scale

A

120°

110

O

r cm

B
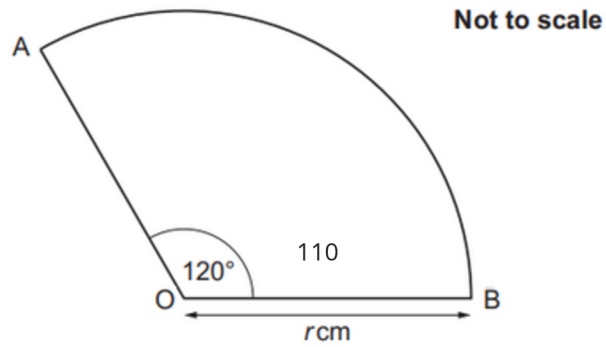
The area of the sector is 5cm^2.
Work out the exact value of the radius, r cm.

r = ... cm [4]

14 (a) Write each of the following ratios in their simplest form.

$45 : 625$

(a) .... : .... [1]

(b) James travels from his home to the city, a distance of 120 miles.
He drives at an average speed of 60 miles per hour
and stops for 30 minutes along the way.
He arrives in the city at 2:45 p.m.
At what time did James leave his home?

(b)_____ [4]

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15 In the diagram, line AB is parallel to line ED.

The points A, C and D lie on a straight line.

The points B, C and E lie on a straight line.

Not to scale
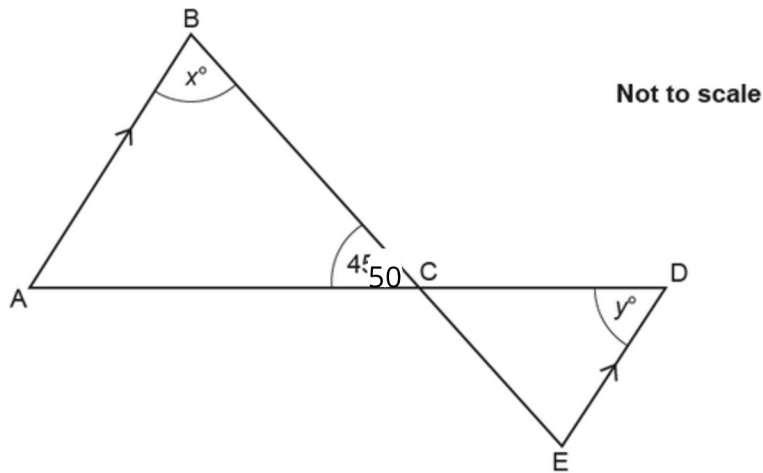
Angle BCA = 45°, angle ABC = x° and angle CDE = y°.

The ratio x : y is 2 : 3.

Work out the value of x.

x =...   [4]

16 (a)   At a sandwich shop:
- The cost of 4 large sandwiches is £24.
- The cost of 3 large sandwiches and 6 small sandwiches is £33.

Calculate the cost of 5 large sandwiches and 3 small sandwiches.
Show all your working.

.... [4]

(b)   Tom has a 3-liter bottle of sports drink.
He drinks 300 milliliters each day after his workout.
Tom thinks that after 8 days, he will have consumed more than 60% of the drink.

Is Tom correct?
Show your calculations to explain your answer.

.... [4]

Turn over

17 (a) Emilia buys 200 stickers for £20.
Emilia sells all of the stickers .
She charges 50p for 2 stickers .
Calculate Emilia's percentage profit.

.... [4]

(b) Marcus earns £250 in May.
He spends 1/2 of his money on entertainment.
He spends £20 on transportation.
What fraction of his money does Marcus have left?

.... [3]

Turn over

18 (a) A community center is hosting a concert.
60 senior tickets are sold.
The ratio of the number of senior tickets sold to the number of regular tickets sold is 3 : 4.

The cost of a senior ticket is £3.00.
The cost of a regular ticket is £6.50.
Calculate the total amount paid for all the tickets.

(a) £ .... [4]

(b) Find the value of √625.

(b) .... [2]

19 A sphere has a radius of 12 cm.

Calculate the volume of the sphere.

Give your answer in terms of r in its simplest form.

[The volume V of a sphere with radius r is $V = \dfrac{4}{3}\pi r^3$.]

.... cm³ [3]

20 Work out.

$$\left(3.2 + \dfrac{5}{9}\right) \times 0.5$$

Give your answer as a decimal

.... [3]

Prepare 4 GCSEs

21 A baker prepares batches of muffins for a café.
They can bake 5 batches of muffins in 20 minutes.

(a) Use this information to show that they can bake 90 batches of muffins in less than 6 hours.

....[4]

(b) What assumption did you make in part (a)?

....
....
....   [1]
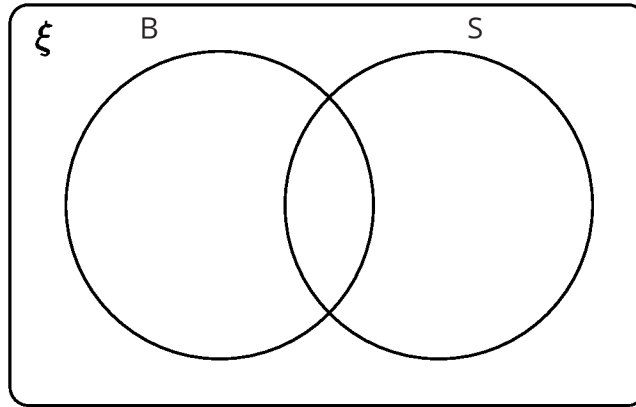
22 In a group of 120 students:

- 65 play basketball (B)

- 52 play soccer (S)

- 30 do not participate in either activity

(a) Complete the Venn diagram.

[3]

(b) One of the 120 students is selected at random.

Find the probability that this student participates in exactly one of the two activities.

(b) .... [2]

23   y is inversely proportional to x.
            y = 10 when x = 4.
       Find the value of y when x = 8.

.... [3]

END OF QUESTION PAPER