

Mock Test Papers - Paper2 - Test2

Paper 2 (Foundation Tier)

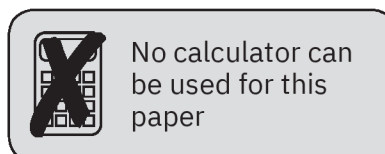
Time allowed: 1 hour 30 minutes

You may use:

- geometrical instruments • tracing paper

Do not use:

- a calculator



F

Please write clearly in black ink Do 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) $-3 + 9$

(a) [1]

(b) $20 + 16 \div 4$

(b) [1]

2 (a) Work out

$$\frac{3}{8} + \frac{9}{16}$$

(a) [2]

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

$$\frac{4}{8} \times \frac{9}{81}$$

(b) [2]

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



[1]

(b) Insert one pair of brackets to make this calculation correct

$$5 + 6 \times 4 - 2 = 28$$

[1]

4 (a) Ella invests £850 at a rate of 3% per year simple interest.
Work out the interest Ella receives after one year.

(a) £..... [2]

(b) Work out the value of Ella's investment after 3 years.

(b) £..... [2]

Turn over

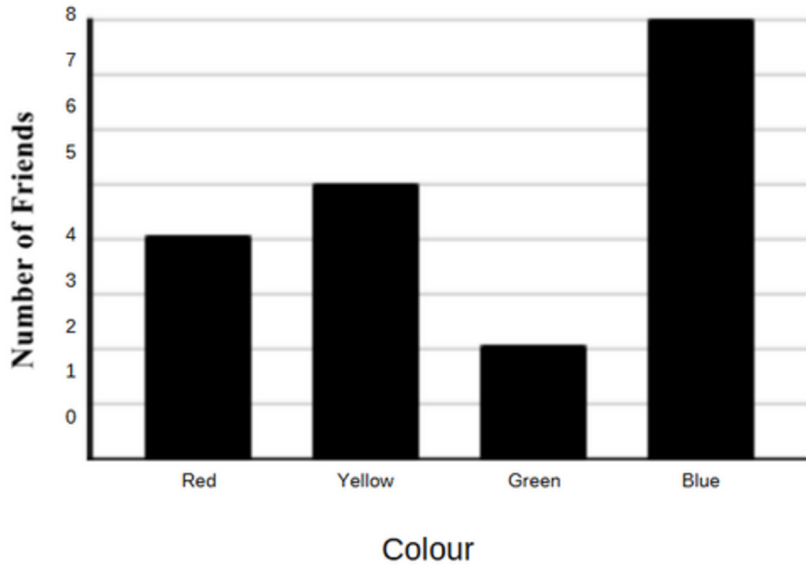
5 Increase 500 by 10%.

..... [3]

6 Sam is 1.52 meters tall.
Jamie is 108 centimeters tall.
Find, in centimeters, how much taller Sam is than Jamie.

.....cm. [2]

7 Ivy asked some of her friends to choose their favourite colour from red, yellow, green and blue. The bar chart below shows the results.



(a) How many friends did Ivy ask in total?

(a) [2]

(b) Write down the mode.

(b) [1]

- 8 (a) Emma hosted a gathering with 80 attendees.
- Half of the attendees were adults.
 - A quarter of the attendees were teenagers.
 - The rest of the attendees were kids.
- How many kids attended Emma's gathering?

(a)..... [3]

(b) Work out $\sqrt[3]{27} \times 5^2$

(b) [3]

9 (a) Liam is organizing a charity fair.

He buys 150 packets of snacks.

Each packet costs 40p, and there's an offer of "buy 3 packets, get the 4th free" when he buys them.

Liam wants to make a 30% profit.

Assuming that he will sell all the packets of snacks, how much should he charge for each packet to reach his profit goal?

(a) [4]

(b) Liam also buys decorations for the fair.

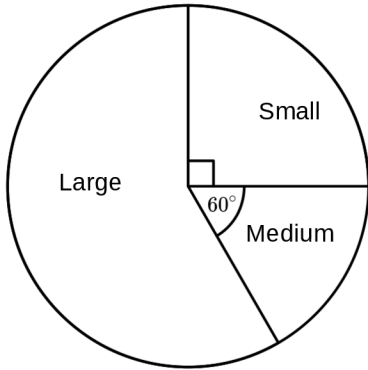
The decorations were originally reduced by 15%. Liam paid £85 for them.

What was the original price of the decorations?

(b)£ [3]

Turn over

- 10 Sarah has a bag of 60 marbles.
There are three different sizes of marbles.
The pie chart shows information about the size of the marbles.



Small marbles weigh 2.2g.

Medium marbles weigh 3.4g.

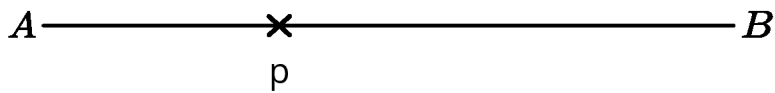
Large marbles weigh 4g.

Work out the total weight of the marbles in Sarah's bag.

.....

[4]

- 11 P is a point on the straight line AB.
Construct the perpendicular to the line AB at the point P.
You must show all construction lines.



[3]

- 12 (a) Write down the exact value of $\tan 45^\circ$.

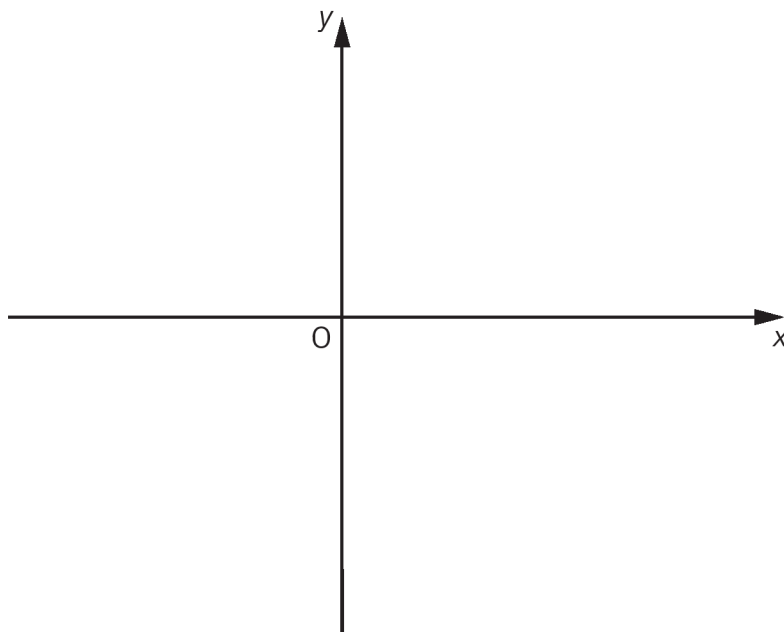
..... [1]

- 13 (a) (i) Sketch the graph of $y = 3$.



[2]

- (ii) Sketch the graph of $y = x + 2$



[2]

- (iii) The point $(4,6)$ is suggested as the intersection of the graphs of $y=3$ and $y=x+2$.
Explain why this is incorrect.

.....
 [1]

(b) Expand and simplify $(x - 2)(x - 5)$

..... [2]

(c) Solve $x^2 + 4x - 12 = 0$

(c) $x =$ or $x =$ [3]

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

16: 36

(a) : [1]

(b) A spinner has two sections: one marked "A" and the other marked "B."

The probability that the spinner lands on "A" is 0.3.

What is the probability that the spinner lands on "B"?

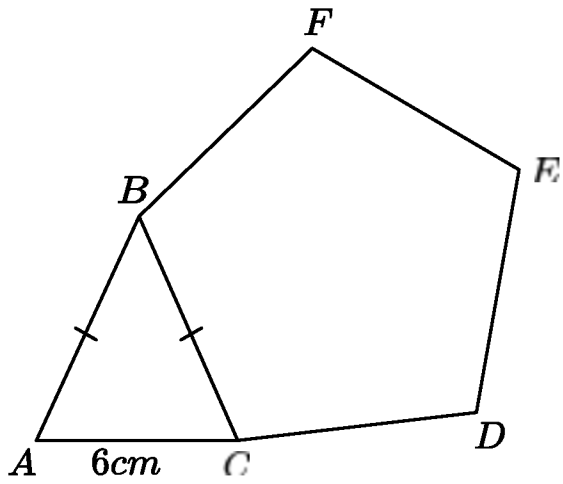
(b) [1]

(c) The spinner is spun 200 times.

Estimate how many times it will land on "A."

(c) [2]

- 15 ABC is an isosceles triangle.
BCDEF is a regular pentagon.



The perimeter of triangle ABC is 24cm.
Work out the perimeter of the shape ABFEDC.

..... cm [4]

- 16 (a) The cost of 3 large pizzas is £18. The cost of 2 large pizzas and 5 small pizzas is £28.50.
Calculate the cost of 4 large pizzas and 2 small pizzas.
Show all your working.

..... [4]

- (b) Leo has a 2-liter container of orange juice.
He uses 240 milliliters each day in his smoothie.
Leo thinks that after 6 days, he will have used up more than 75% of the juice.
Is Leo correct?
Show your calculations to explain your answer.

[4]

- 17 (a) Emma buys 300 bracelets for £40.
Emma sells all of the bracelets. She charges 50p for 3 bracelets.
Calculate Emma's percentage profit.

..... [4]

- (b) Alex earns £240 in June.
He spends $\frac{1}{3}$ of his money on entertainment.
He spends £30 on transportation.
What fraction of his money does Alex have left?

..... [3]

18 A shopper is buying some items for a party.
The items and their prices are listed below:



Party hat: £3.50



Pen pack: £2.99



Gift bag: £7.50

The shopper has £50 to spend.

They first buy 6 party hats and 2 gift bags.

They then buy as many pen packs as possible with the remaining money.

(a) Work out the maximum number of pen packs the shopper can buy.

You must show your working.

(a) Number of pen packs [5]

(b) Work out the amount of money they have left over.

(b) Amount left over £ [2]

19 A sphere has a radius of 5 cm.

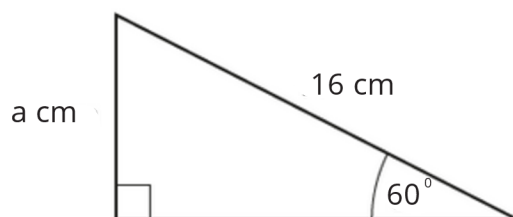
Calculate the volume of the sphere.

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

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

..... cm³ [3]

20 The diagram shows a right-angled triangle.



Not to scale

Work out the value of a .

$a =$ [3]

Turn over

21 A chef bakes cookies for a bakery.
They can bake 6 trays of cookies in 30 minutes.

(a) Use this information to show that they can bake 72 trays of cookies in less than 7 hours.

.....[4]

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

.....
.....
.....

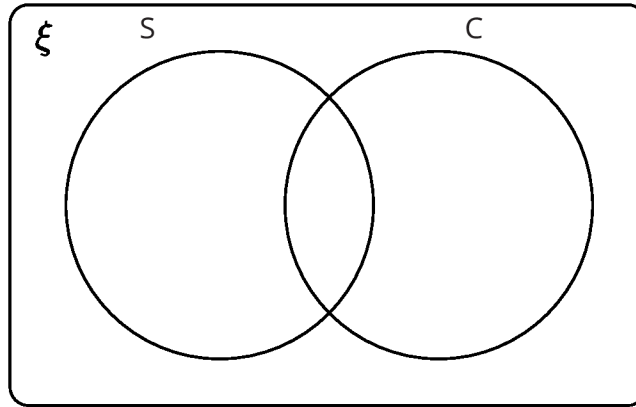
[1]

Turn over

22 In a group of 100 athletes:

- 54 swim (S)
- 47 cycle (C)
- 21 do not participate in either activity.

(a) Complete the Venn diagram.



[3]

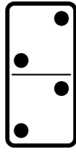
(b) One of the 100 athletes is selected at random.

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

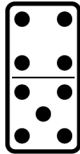
(b) [2]

23 Lucy is making a sequence of patterns using tiles.

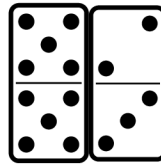
Here are the first four patterns in the sequence:



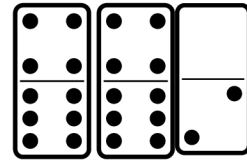
Pattern 1
4 tiles



Pattern 2
9 tiles



Pattern 3
15 tiles



Pattern 4
22 tiles

(a) Lucy started with 100 tiles.

Lucy says, "I still have enough tiles to make Pattern 5 and Pattern 6."

Is Lucy correct?

Show how you decide.

..... because

.....

[3]

END OF QUESTION PAPER