



Mock Set 1 Paper 02 Calculator

Foundation Tier — Total Marks: 80

Time allowed: 1 hour and 30 minutes

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is **80**.
- The marks for **each** question are shown in brackets
– *use this as a guide to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Question 1

Write down two different factors of 24.

.....

(Total for Question 1 is 1 mark)

Question 2

Write 0.8 as a fraction in its simplest form.

.....

(Total for Question 2 is 1 mark)

Question 3

Change 4.5 metres to centimetres.

.....

(Total for Question 3 is 1 mark)

Question 4

Write down a square number that is between 15 and 60.

.....

(Total for Question 4 is 1 mark)

Question 5

Work out 50% of 260.

.....

(Total for Question 5 is 1 mark)

Question 6

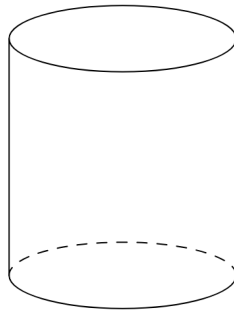
Mia works for 4 hours. She is paid £48. How much is Mia paid per hour?

.....

(Total for Question 6 is 2 marks)

Question 7

Here is a 3-D shape.



(a) Write down the name of this 3-D shape.

.....
(1 mark)

(b) In the space below, draw a sketch of a rectangular prism.

.....
(2 marks)

(Total for Question 7 is 3 marks)

Question 8

Luca needs to buy some equipment for a sports session.

Here are the prices:

Item	Price
Footballs	£8.50 each
Hockey sticks	£24 for 2
Cricket bats	£21 each
Tennis balls	£6 for 6

Luca needs to buy

4 footballs

6 hockey sticks

3 cricket bats

6 tennis balls

Luca has £180 to spend.

Show that Luca can buy all the items he needs.

.....

(Total for Question 8 is 4 marks)

Question 9

Amir is buying a shirt and a tie.

He has a choice of three colours of shirt and a choice of three styles of tie.

Shirt	Tie
Red (R)	Plain (P)
Blue (B)	Striped (S)
Green (G)	Checked (C)

Amir is going to choose one shirt and one tie.

List all the possible combinations Amir can choose.

.....

(Total for Question 9 is 2 marks)

Question 10

A jar contains 35 green marbles and 49 yellow marbles.

Write down the ratio of the number of green marbles to the number of yellow marbles in the jar.

Give your ratio in its simplest form.

.....

(Total for Question 10 is 2 marks)

Question 11

Jamal is going to pick one card at random from a standard deck of 52 cards.

Choose the word that best describes the probability that the card will be an Ace.

- (a) impossible unlikely evens likely certain

.....
(1 mark)

Choose the word that best describes the probability that the card will be red.

- (b) impossible unlikely evens likely certain

.....
(1 mark)

(Total for Question 11 is 2 marks)

Question 12

A train travels at an average speed of 72 kilometres per hour for 3 hours.

Work out the distance that the train travels in the 3 hours.

..... km

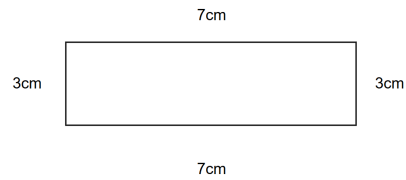
(Total for Question 12 is 2 marks)

Question 13

Sofia is trying to find the area of this rectangle.

She writes,

“The area is 441 cm^2 because $7 \times 3 \times 7 \times 3 = 441$ ”



- (a) Explain what is wrong with Sofia's method.

.....
(1 mark)

- (b) Alex works out the area of a shape. His answer is 42 cm.
Explain why his answer cannot be fully correct.

.....
(1 mark)

(Total for Question 13 is 2 marks)

Question 14

4 kg of rice costs £5.60.

3 kg of rice and 7 kg of beans cost £10.15.

Work out the cost of 2 kg of rice and 6 kg of beans.

.....

(Total for Question 14 is 4 marks)

Question 15

Liam and Sophie share £120.

Liam gets 65% of the money.

He spends 28% of the money he gets.

How much money does Liam have left?

.....

(Total for Question 15 is 3 marks)

Question 16

150 people were asked to choose their favourite type of sport.
They each chose from football, basketball, tennis or rugby.

64 of these people were children. The rest were adults.

Of the 28 people who chose football, 12 were children.

Of the 70 people who chose basketball, 41 were adults.

9 adults chose tennis.

The number of children who chose tennis was the same as the number of adults who chose rugby.

Work out the total number of people who chose rugby.

You must show how you get your answer.

.....

(Total for Question 16 is 4 marks)

Question 17

Here are the heights, in cm, of 16 apple trees.

158 162 171 176 165 180 174 160
169 172 185 178 164 182 167 170

- a Show this information in a stem and leaf diagram.



Key:

.....
(3 marks)

(Total for Question 17 is 3 marks)

Question 18

- (a) Work out $\frac{12.5 + 7.3}{5.4 \times 3.2}$

Give your answer as a decimal.

Write down all the figures on your calculator display.

- (b) Write your answer to part (a) correct to 2 decimal places.

.....

(Total for Question 18 is 3 marks)

Question 19

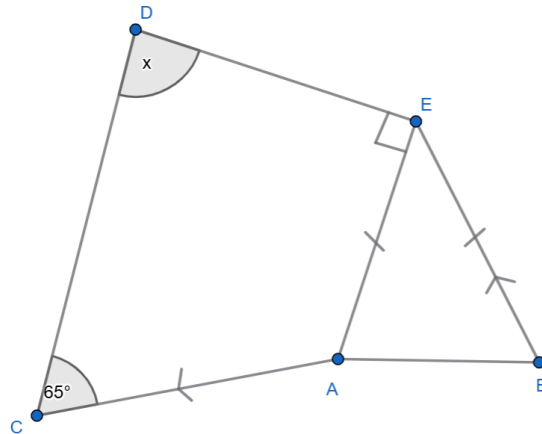
The diagram shows quadrilateral $CDEA$ and triangle AEB .

$DE \parallel AC$, $\angle AEB = 90^\circ$, $AE = EB$.

$\angle ACD = 65^\circ$.

Work out the size of $x = \angle CDE$.

You must give a reason for each stage of your working.



.....

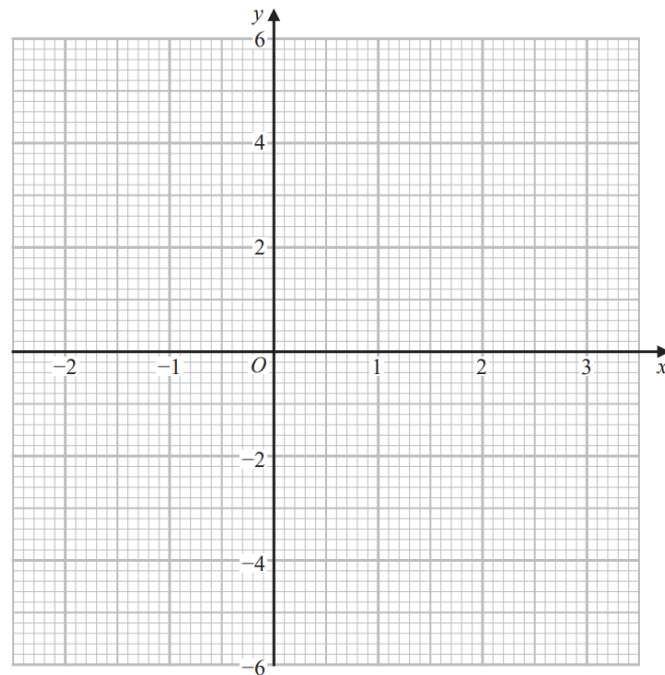
(Total for Question 19 is 4 marks)

Question 20

(a) Complete the table of values for $y = x^2 - 2x - 3$.

x	-2	-1	0	1	2	3
y	5	0		-4		0

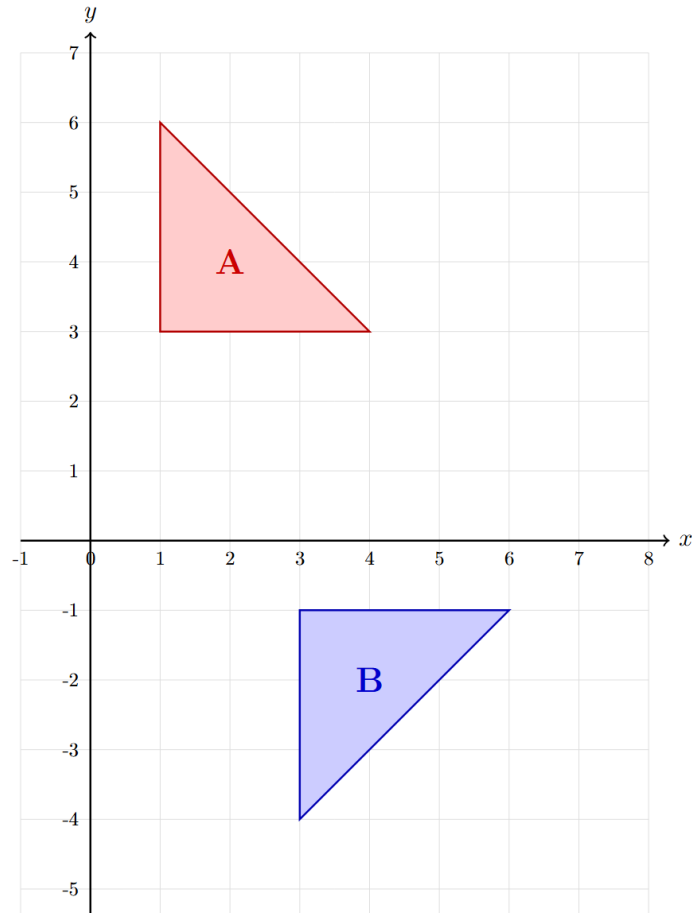
(b) On the grid, draw the graph of $y = x^2 - 2x - 3$ for values of x from -2 to 3 .



.....
(Total for Question 20 is 4 marks)

Question 21

Describe fully the single transformation that maps triangle A onto triangle B.



.....

(Total for Question 21 is 2 marks)

Question 22

Answer the following questions.

- (a) Expand and simplify $4(a + 3) + 5(a - 1)$

.....
(2 marks)

- (b) Factorise fully $14y^2 - 42y$

.....
(2 marks)

- (c) Make p the subject of the formula $q = 5p - 8$

.....
(2 marks)

(Total for Question 22 is 6 marks)

Question 23

James is organising a concert to raise money for a local shelter.

He spends:

£85 on refreshments

£150 on venue hire

£95 on advertising

James sells 60 tickets for the concert.

Each ticket costs £7.25.

Work out the percentage profit James makes for the shelter.

.....

(Total for Question 23 is 4 marks)

Question 24

Sophie invests £5000 in a savings account for 2 years.
The account pays compound interest at a rate of 3.05% per year.

Calculate how much Sophie has in this savings account at the end of the 2 years.

.....

(Total for Question 24 is 2 marks)

Question 25

Solve $7y - 10 = 38 - y$

.....

(Total for Question 25 is 3 marks)

Question 26

Alex, Ben and Carl share some money in the ratio 5 : 3 : 4.

Ben gets £90.

Alex then gives some of his share to Ben and some to Carl.

The money that Alex, Ben and Carl each have is now in the ratio 4 : 5 : 3.

How much money did Alex give to Carl?

.....

(Total for Question 26 is 4 marks)

Question 27

The bearing of port Y from port X is 245° .

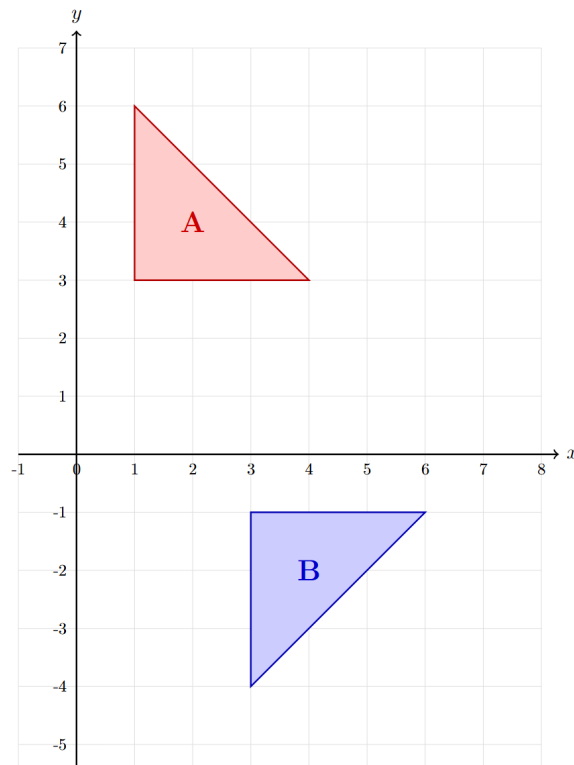
Work out the bearing of port X from port Y .

.....

(Total for Question 27 is 2 marks)

Question 28

The diagram shows an empty tank in the shape of a cylinder.
The cylinder has radius 18 cm and height 50 cm.
Water flows into the tank at a rate of 0.60 litres per minute.
Calculate the number of minutes it will take to completely fill the tank.
Give your answer correct to the nearest minute.



..... minutes

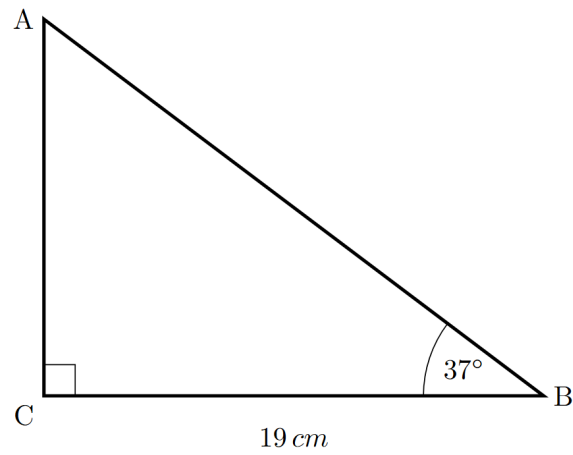
(Total for Question 28 is 4 marks)

Question 29

ABC is a right-angled triangle with $\angle C = 37^\circ$ and $BC = 19$ cm.

Calculate the length of AB .

Give your answer correct to 3 significant figures.



.....

(Total for Question 29 is 2 marks)

Question 30

Solve the simultaneous equations:

$$2x + y = 3$$

$$5x + 3y = 7$$

.....
(Total for Question 30 is 3 marks)

Total for Paper: 80 marks