Maths paper 2

Morning (Time: 1 hour 30 minutes) Paper Reference **1MA2/F**

Mathematics
Paper 2
Foundation

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, SELECT

Tracing paper may be used.

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 not 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 as to how much time to spend on each question.*

Advice

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

Turn over ▶

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

Question 1: Simplify: $45 \div (3 \times 5)$

_____

(1)

Question 2: Round 3.7861 to 2 significant figures

_____

(1)

Question 3: Convert 7/8 to a decimal

_____

(1)

Question 4: Convert 4.2 kilometres into metres

_____

(1)

Question 5: Work out 25% of 80

_____

(1)

Question 6: Write down all the prime numbers between 20 and 30

_____

(2)

Question 7:

Jake buys 26 candles each costing £1.45 each.

He pays using 2 £20 notes.

How much change should Jake receive?

_____

(3)

Question 8:

Simplify the ratio 18:24:12

_____

(1)

Question 9:

Expand the following

a) $4(b+2)$

_____

(1)

b) $3y^2(y - 3)$

_____

(2)

c) $(y + 1)(y + 3)$

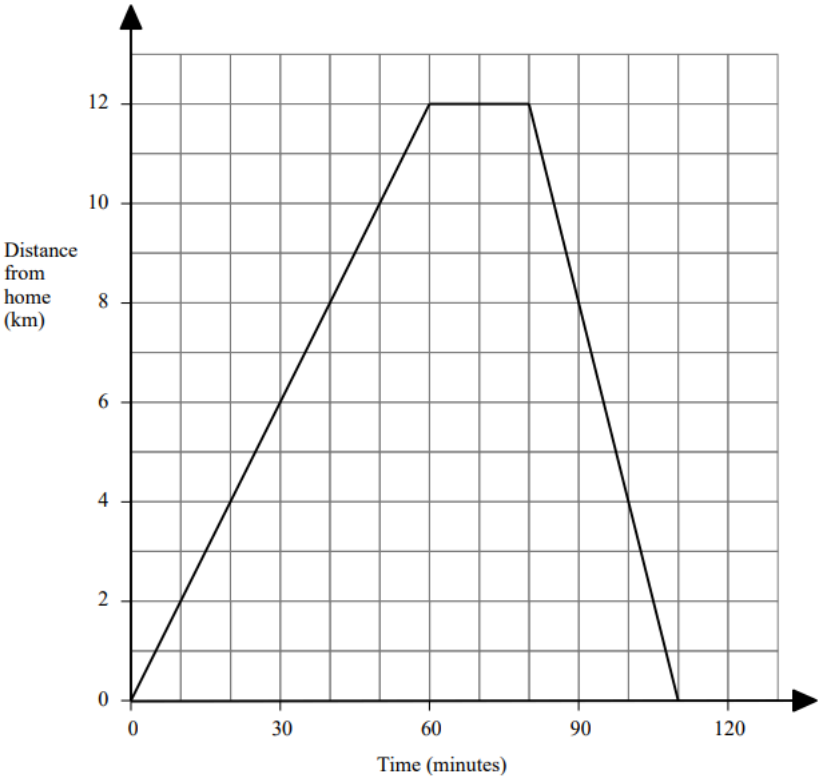
_____

(2)

Question 10:

Jason went on a bike ride to the local supermarket.

The graph below shows Jason's distance from home to the supermarket whilst on his bike ride.



a) How far did Jason travel in the first 20 minutes?

_____

(1)

b) After 60 minutes, Jason stopped at the shops. How long did he stop for?

_____

(1)

c) How far did Jason travel in total?

_____

(1)

Question 11:

Marcelo bought a premium watch for £3200.

The value of Marcelo's watch increases by 4% each year.

a) Find how much Marcelo's watch is worth after 1 year.

_____

(2)

b) How many years will it take for Marcelo's watch to exceed £4000.

_____

(1)

Question 12:

Achilles has Black, white, and red counters in a bag.

The ratio of black to white to red counters is 4:5:2.

To the nearest whole number, what percentage of the counters are white?

_____

(3)

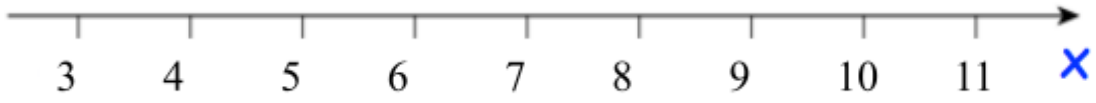
Question 13:

a) Solve $3x < 21$

_____

(1)

b) Hence, or otherwise, represent the inequality $3x < 21$ on the number line below.



_____

(2)

Question 14:

Simplify:

a) x^2 x x^5

_____

(1)

b) $\frac{2x^6}{x^3}$

_____

(1)

c) x^0

_____

(1)

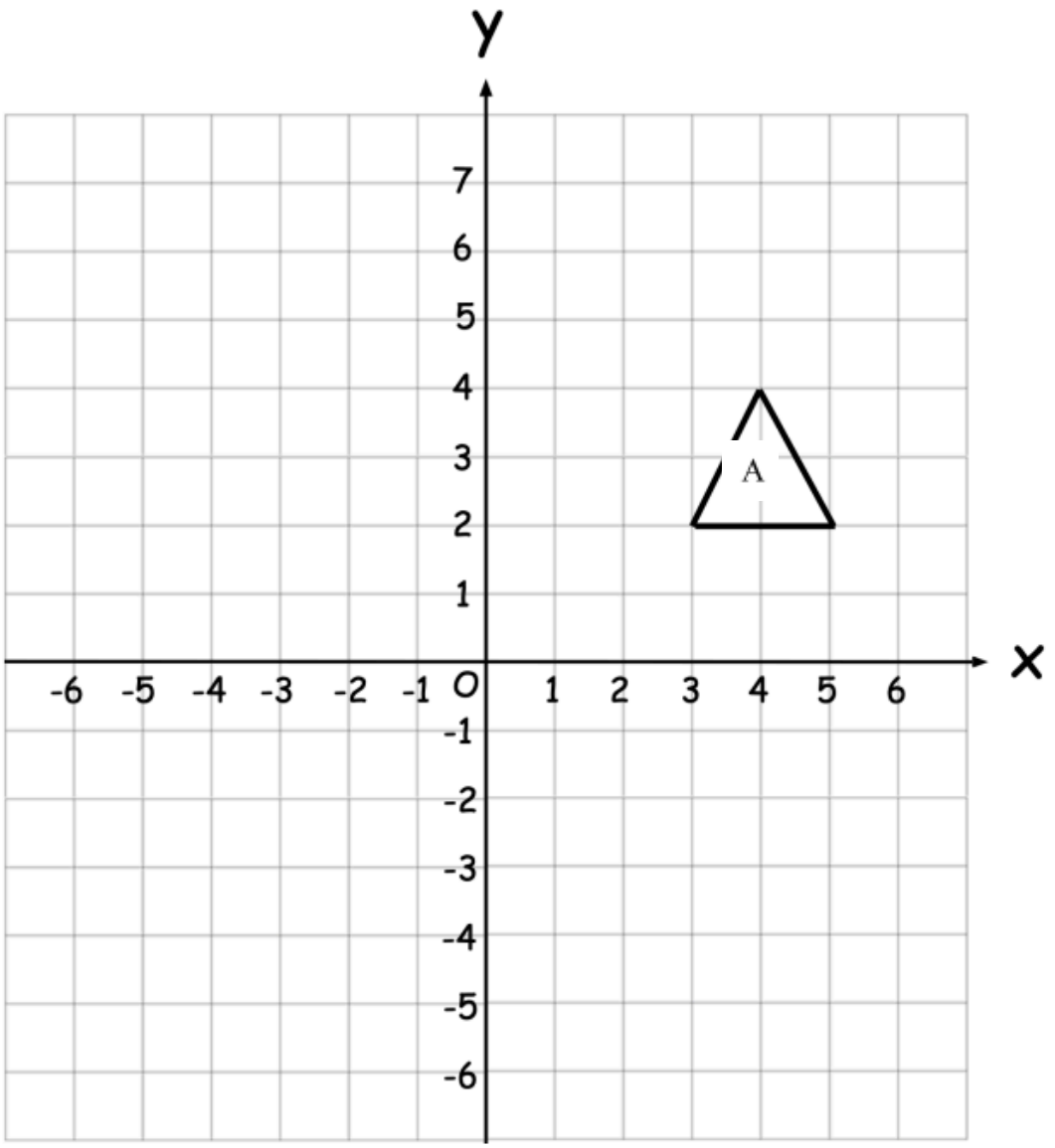
d) $(2xy^3)^2$

_____

(2)

Question 15:

Reflect triangle P along the line x = 1.



(3)

Question 16:

Ilija hires an electrician for his property.

The electrician charges a fixed callout fee of £80, and then £47.75 per hour.

Ilija paid £271 in total. Work out how many hours the electrician worked at his property.

_____

(3)

Question 17:

A car travels 240 kilometres in 3 hours 20 minutes.

Calculate the average speed, in Km/minutes, of the car.

_____

(4)

Question 18:

a) Write down an expression, in terms of n, for the nth term of the following sequence

17, 13, 9, 5

_____

(2)

b) Find the 16^{th} term of the sequence

_____

(2)

Question 19

The distance between 2 towns is 350 miles rounded to the nearest whole number.

Write down an error interval for he distances between the 2 towns.

_____

(2)

Question 20:

Kyle is x years older.

His brother Henry is 5 years younger than him.

Kyles mum is 3 times as old as Henry.

a) Write down an expression for Sarah's age

_____

(2)

b) If the combined sum of their ages is 80, how old is Kyle?

_____

(3)

Question 21:

A 375g can of dog food costs £1.20

A 100g can of cat food costs 95p

Alex buys the same number of grams of cat food and dog food.

Work out the least possible amount of money that he could have spent.

_____

(4)

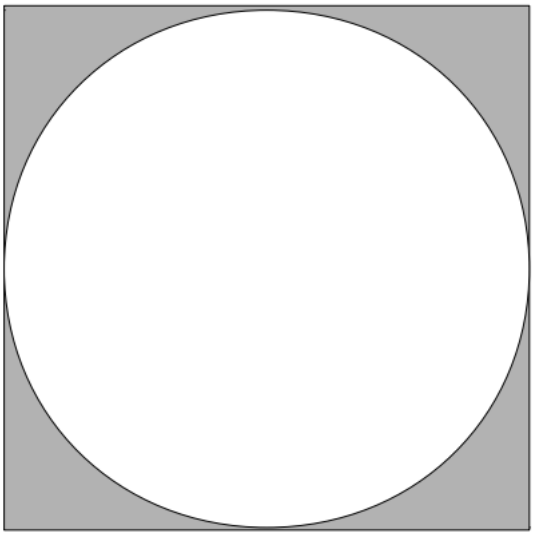
Question 22:

A circle is enclosed by a square, as shown in the diagram below.

Each side length of the square is 6cm.

Find the area of the shaded region.

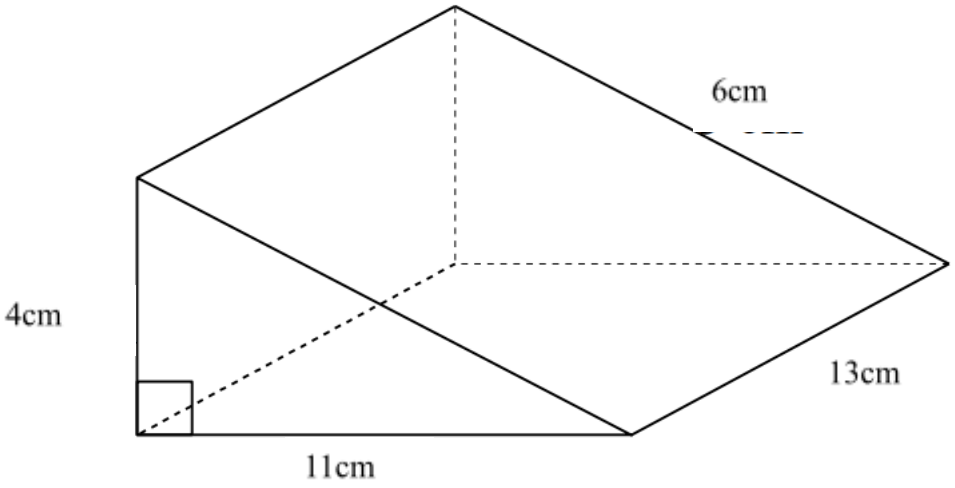
Give your answer to 2 decimal places.



(3)

Question 23:

Find the volume of the following triangular prism.

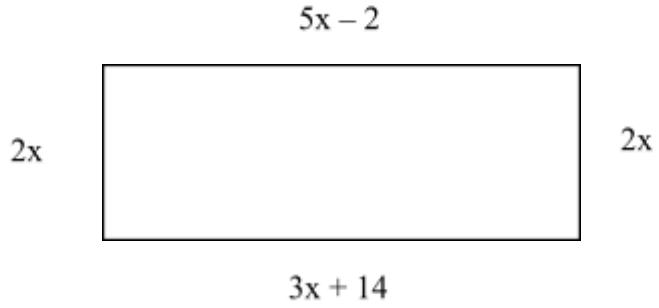


(3)

Question 24:

The diagram below shows a rectangle. The sides are measured in centimetres.

Find the perimeter of the rectangle below.



(5)

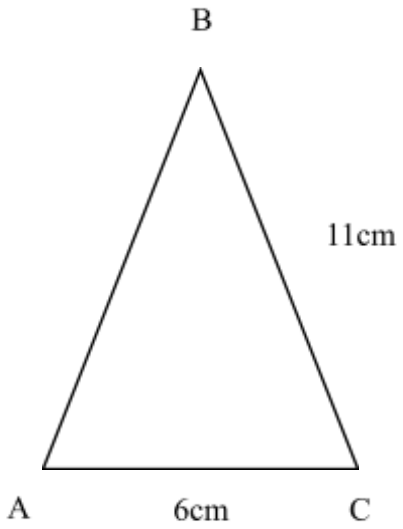
Question 25:

ABC is an isosceles triangle

AB = BC = 11cm

AC = 6cm

Find the area of the triangle



_____

(4)

Question 26:

The sizes of the interior angles of a triangle are in the ratio 2: 5: 9

Calculate the difference in size between the largest and smallest angles

_____

(4)

Question 27:

A helicopter leaves from Larnaca and flies due east for 8 miles.

Then the helicopter flies 12 miles north before landing.

Calculate the bearing of the helicopter from Larnaca.

_____

(3)

Click or tap here to enter text.

TOTAL FOR PAPER IS 80 MARKS

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