STADIRA TRAINING INSTITUTE

MATHEMATICS PRACTICE PAPERS

Candidate name	
Centre number	Candidate number

MATHEMATICS

0580/03

Paper 3 (Core)

Mock Set 1

1 hour 30 minutes

INSTRUCTIONS

- Answer all questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do not use staples, paper clips, correction fluid or correction tape.
- You may use a calculator.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].
- You should use a calculator where appropriate.

This is a Stadira Training Institute practice paper. It is not a past paper and is not endorsed by Cambridge Assessment International Education. It was written by teachers with more than 15 years teaching the Cambridge IGCSE curriculum.

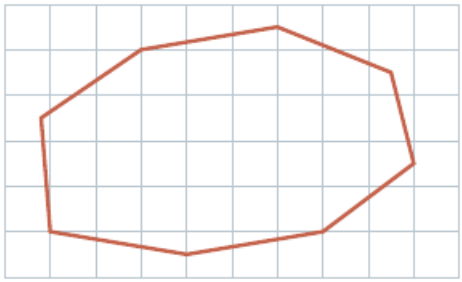
1

Write the number 6049 in words.

[1]

2

The diagram shows a shape drawn on a 1 cm^2 grid.



By counting squares, estimate the area of the shape.

Answer ..... cm^2 [1]

3

The diagram shows a shape.



Draw all the lines of symmetry on this shape.

[2]

4

A café charges $6.25 for a cake and $3.80 for a juice.

Ame buys 2 cakes and 3 juices.

Work out how much change she receives from a $50 note.

[3]

5

Calculate.

(a) $4.2^3 - 0.2^3$

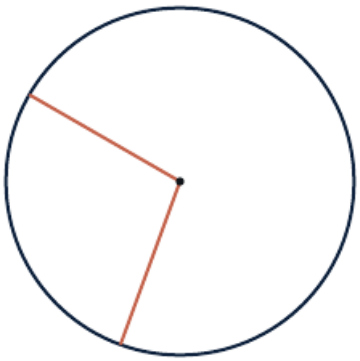
[1]

(b) $\dfrac{7.694 - 3.214}{0.32}$

[1]

6

The diagram shows a circle divided into two sectors.



(a) Measure the reflex sector angle.

[1]

(b) On the diagram, draw a line that divides the reflex sector into two smaller sectors with angles in the ratio 3 : 10.

[3]

7

The line AB is drawn below.

The point P lies on the line AB.



(a) Measure the length of line AB.

Answer ..... cm [1]

(b) Draw a straight line, PQ, that is

- perpendicular to line AB

and

- 50% longer than line AB.

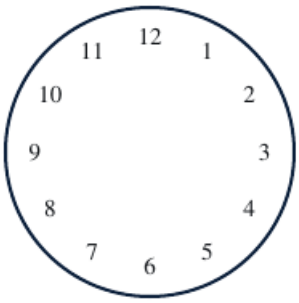
[3]

8

Work out a fraction that is exactly half-way between $\frac{1}{4}$ and $\frac{5}{6}$.

[2]

9



(i) Complete the clock diagram to show the time 14 35.

[1]

(ii) A train leaves a station at 14 35.

It takes 145 minutes to reach the first stop.

Work out the time it reaches the first stop.

[2]

(b) A bus takes 1 hour 20 minutes to travel 56 km between two towns.

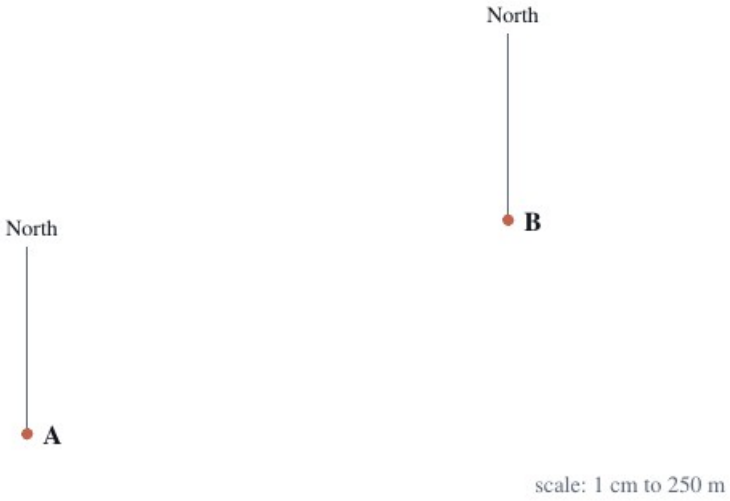
Work out the average speed of the bus in kilometres per hour.

Answer ..... km/h [2]

10

The scale drawing shows the positions of two schools, A and B.

The scale is 1 centimetre represents 250 metres.



(a) Measure the bearing of B from A.

[1]

(b) Write the scale in the form 1 : *n*.

[1]

(c) On a second scale drawing, A and B are five times as far apart as on the first scale drawing.

Write down the scale of the second scale drawing.

Give your answer in the form 1 : *n*.

[1]

11

Neo asks 60 students if they prefer to drink water, juice or milk.

She represents the results on a pie chart.

(a) The number of students who prefer milk is represented by a sector angle of 54°.

Calculate the number of students who prefer milk.

[2]

(b) Twice as many students prefer water to juice.

Calculate the sector angle that represents the number of students who prefer water.

[2]

12

A cuboid has length 8 cm, width 5 cm and height 3 cm.

Work out the surface area of the cuboid.

Answer ..... cm^2 [3]

13

A set of five different whole numbers has

- the smallest number -2
- a range of 13
- a median of 7
- a mean of 5.

Work out the four other numbers.

Write your numbers in order, starting with the smallest.

-2 , ... , ... , ... , ...

[3]

14

Solve.

$4(3x - 5) = 64$

[3]

15

The price of a concert ticket is either $95 or 78 euros.

The exchange rate is 1 euro = $1.15 .

Calculate the difference between the two prices.

Give your answer in euros.

Answer ..... euros [2]

16

These are the first four diagrams in a sequence.

The diagrams are made using grey squares and white squares.

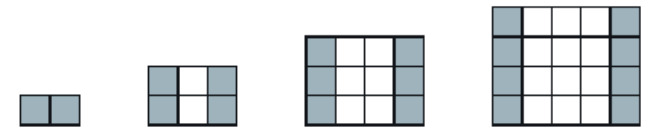


diagram 1 diagram 2 diagram 3 diagram 4 diagram 5

(a) Draw diagram 5 in the space above.

[1]

(b) Complete the table for diagram 4 and diagram n.

Write your answers for diagram n in their simplest form.

diagram	1	2	3	4	n
number of grey squares	2	4	6		
number of white squares	0	2	6		$n(n - 1)$
total number of squares	2	6	12		

[5]

(c) Complete this statement by writing an expression in terms of n.

The total number of squares in diagram n is the same as the number of white squares in diagram .....

[1]

(d) Thabo has 900 white squares but only 50 grey squares.

He makes the largest possible diagram with his squares.

Work out the number of white squares he uses.

[2]

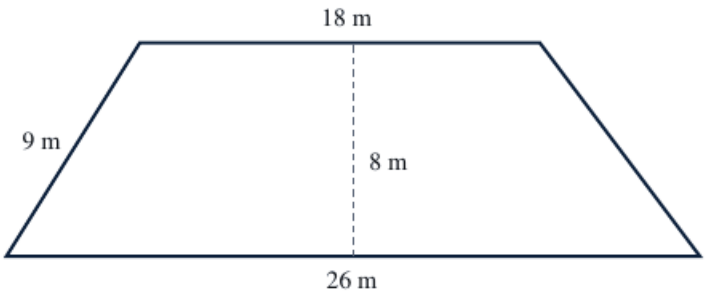
17

(a) A cone has a radius of 6 cm and a height of 10 cm.

Work out the volume of the cone.

Answer ..... cm^3 [2]

NOT TO SCALE



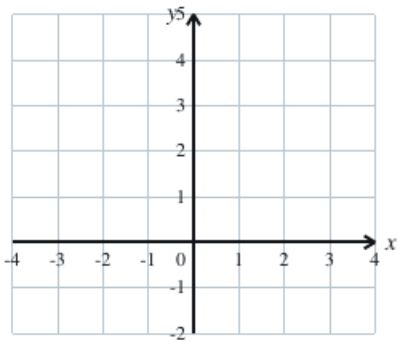
Work out the area of the trapezium.

Give the units of your answer.

Answer .... [3]

18

(a) On the grid, draw the graph of $y = 0.5x + 2$ for $-4 \leq x \leq 4$.



[2]

(b) Write down the equation of the line that

- passes through the point (0, 5)

and

- has gradient 0.

[1]

19

An ant walks at a constant speed of 3.5 cm/s.

The ant takes 16 seconds to walk once around the circumference of a circular plate.

Calculate the diameter of the plate.

Answer ..... cm [3]

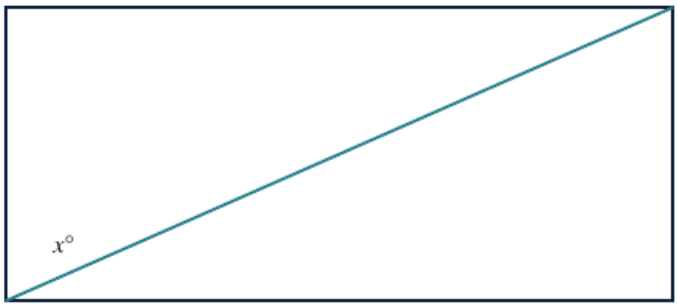
20

The diagram shows a rectangle.

The longest side of the rectangle is 8.4 m.

8.4 m

NOT TO SCALE



The perimeter of the rectangle is 27.6 metres.

Calculate the value of x.

[4]

21

(a) Write $t \times t \times t \times t$ as a power of t.

[1]

(b) Simplify.

$5w^4 \times 3w^2$

[2]

22

Kefilwe invests $16 500 at a rate of 3.9% per year compound interest.

Calculate the value of her investment at the end of 6 years.

Give your answer to the nearest dollar.

[3]

23

Two buses leave the bus station at 09 00.

One returns to the station every 28 minutes.

The other returns to the station every 24 minutes.

Work out the time they will first return to the station together.

[3]

24

A woman buys a painting for $850.

She sells the painting for $986.

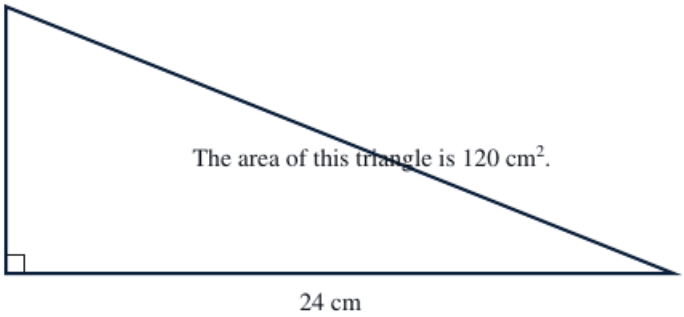
Calculate the percentage profit the woman makes on the painting.

Answer ..... % [2]

25

The diagram shows a right-angled triangle.

NOT TO SCALE



Calculate the length of the longest side.

Answer ..... cm [3]

END OF PAPER