STADIRA TRAINING INSTITUTE

MATHEMATICS PRACTICE PAPERS

Candidate name	
Centre number	Candidate number

MATHEMATICS

0580/03

Paper 3 (Core)

Mock Set 6

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

A clinic orders medical supplies.

(a) A box of gloves costs P84.75 .

Work out the cost of 14 boxes.

[2]

(b) The clinic has a budget of P2000 for gloves.

Work out the greatest number of boxes it can buy.

[2]

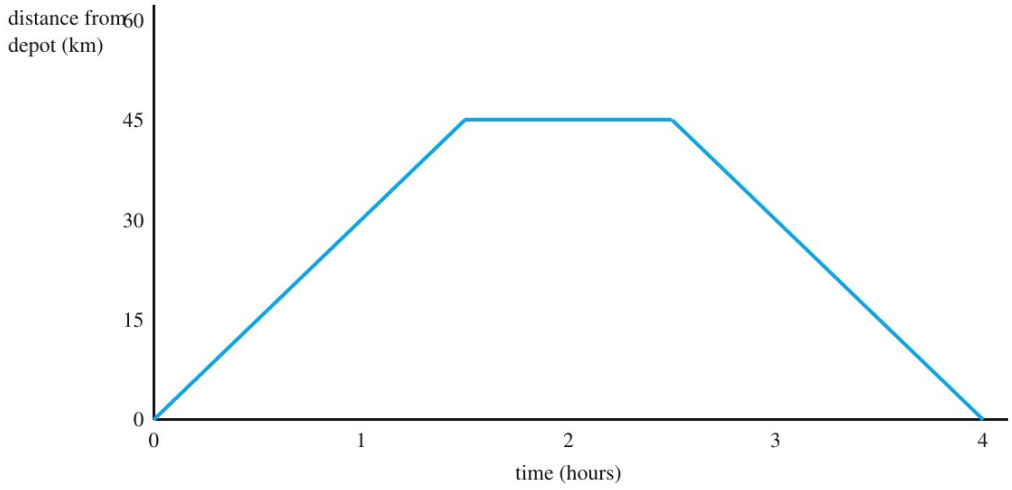
(c) A different item costs P310 after a 24% discount.

Work out the price before the discount.

[3]

2

The travel graph shows a delivery van leaving a depot and returning.



(a) Write down how far the van is from the depot after 2 hours.

Answer ..... km [1]

(b) Calculate the speed of the van on the outward journey.

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

(c) Calculate the speed of the van on the return journey.

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

3

A boat sails from harbour *H* on a bearing of 205° for 12 km to point *K*.

(a) Write down the bearing of *H* from *K*.

Answer ..... ° [2]

(b) From *K* the boat sails due east.

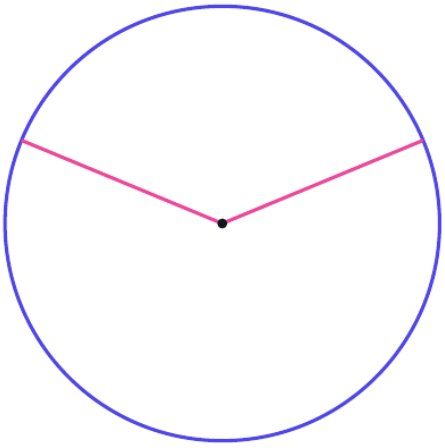
Write down the bearing on which it is now sailing.

Answer ..... ° [1]

4

The diagram shows a sector of a circle of radius 14 cm.

The angle of the sector is 135°.



(a) Calculate the length of the arc.

Give your answer correct to 1 decimal place.

Answer ..... cm [3]

(b) Calculate the perimeter of the sector.

Answer ..... cm [2]

5

Solve.

(a) $6x - 11 = 2x + 9$

[3]

(b) $\frac{x + 3}{2} = 7$

[2]

6

A water tank in the shape of a cuboid measures 2.4 m by 1.1 m by 0.9 m.

(a) Calculate the volume of the tank in cubic metres.

Answer ..... m^3 [2]

(b) 1 m^3 = 1000 litres.

The tank is 70% full.

Calculate the number of litres of water in the tank.

Answer ..... litres [3]

7

The table shows the times, in minutes, taken by 60 learners to travel to school.

time (t min)	$0 < t \leq 15$	$15 < t \leq 30$	$30 < t \leq 45$	$45 < t \leq 60$
frequency	9	21	20	10

(a) Write down the modal class.

[1]

(b) Calculate an estimate of the mean travel time.

Answer ..... min [4]

(c) One learner is chosen at random.

Find the probability that this learner took 30 minutes or less.

[2]

8

A rectangle has length $(x + 5)$ cm and width x cm.

Its perimeter is 46 cm.

(a) Write down an equation in x and solve it.

[3]

(b) Work out the area of the rectangle.

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

9

Naledi and Tumi share a prize in the ratio 7 : 5 .

Naledi receives P630 .

(a) Work out the total prize.

[3]

(b) Work out how much Tumi receives.

[1]

10

A machine part is a cylinder with a cylindrical hole through the centre.

The outer radius is 5 cm, the inner radius is 2 cm and the length is 8 cm.

(a) Calculate the volume of metal in the part.

Give your answer correct to the nearest whole number.

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

(b) The metal has density 2.7 g/cm^3.

Calculate the mass of the part in grams.

Answer ..... g [2]

11

The *n*th term of a sequence is 100 - 4*n* .

(a) Write down the 15th term.

[1]

(b) Work out which term of the sequence is equal to 20.

[2]

(c) Explain why no term of the sequence is equal to 21.

[1]

12

A regular polygon has 15 sides.

(a) Calculate the size of each exterior angle.

Answer ..... ° [2]

(b) Calculate the sum of the interior angles.

Answer ..... ° [2]

13

(a) Work out $\frac{8.7 \times 4.2}{1.9 + 0.65}$.

Give your answer correct to 3 significant figures.

[2]

(b) Work out 2.5^4.

[1]

14

Thato invests P20 000 at 6.5% per year compound interest.

(a) Calculate the value of the investment after 4 years.

Give your answer correct to the nearest pula.

[3]

(b) Calculate the total interest earned over the 4 years.

[1]

15

$y = 5 - 2x$

(a) Complete the table of values.

x	-1	0	2	4
y	7		1	

[2]

(b) Write down the gradient of the line.

[1]

(c) Write down the coordinates of the point where the line crosses the x-axis.

Answer (..... , ...) [2]

16

Two triangles are mathematically similar.

The smaller triangle has sides 6 cm, 8 cm and 10 cm.

The shortest side of the larger triangle is 15 cm.

(a) Write down the scale factor.

[1]

(b) Calculate the length of the longest side of the larger triangle.

Answer ..... cm [2]

17

Maize meal is sold in two sizes.

A 500 g packet costs P18.50 .

A 1.2 kg packet costs P42.00 .

Which packet is better value for money?

You must show your working.

[3]

18

A bus leaves Gaborone at 14 40 .

The journey takes 3 hours 50 minutes.

(a) Work out the arrival time.

[2]

(b) On another day the bus leaves 25 minutes late.

Work out the new arrival time.

[1]

END OF PAPER