DULWICH COLLEGE | SINGAPORE |

Name:

Paper 1
YEAR 9 Mathematics
End of Year Assessment
2020/21

Time limit: 45 **minutes**
Marks available for this paper: 46 marks

READ THESE INSTRUCTIONS FIRST

Write in dark blue or black pen. You should use a pencil for any diagrams or graphs.

Do not use correction fluid.

Answer **all** questions.

If working is needed for any question, it must be shown below that question.

Final answer marks will not be awarded without preceding method marks.

Electronic calculators are allowed.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to **three significant figures**.

Q1.

(a) Find the value of $12 \div (2 - 5)$

.....

(1)

(b) Find the value of 6^4

.....

(1)

(c) Write down the prime number whose value is nearest to 33

.....

(1)

(d) Find the cube root of 343

.....

(1)

(Total for question = 4 marks)

Q2.

(a) Write 0.8 as a percentage.

..... %

(1)

(b) Write 0.023 as a fraction.

.....

(1)

(c) Write 5.6382 correct to 2 decimal places.

.....

(1)

(d) Work out $\sqrt{43.65} + 1.3^2$

.....

(1)

(e) Work out $\frac{3}{8}$ of 56.8 kg.

..... kg

(2)

(Total for question = 6 marks)

Q3.

(a) $A = 2^2 \times 3 \times 5^2$

$B = 2^3 \times 5$

(i) Find the HCF of A and B.

.....

(2)

(ii) Find the LCM of A and B.

.....

(2)

(b) $\frac{8^2 \times 8^3}{8^4} = 2^n$

Find the value of n.

n = ...

(2)

(Total for question = 6 marks)

Q4.

(a) Write 7.9×10^{-4} as an ordinary number.

.....

(1)

(b) Work out $(6.5 \times 10^5) \times (3.1 \times 10^3)$

Give your answer in standard form.

.....

(2)

(Total for question = 3 marks)

Q5.

(a) Correct to the nearest millimetre, the length of a side of a regular hexagon is 3.6 cm.
Calculate the upper bound for the perimeter of the regular hexagon.

.....cm
(2)

(b) $P = \frac{a}{m-x}$

$x = 8$ correct to 1 significant figure
$a = 4.6$ correct to 2 significant figures
$m = 20$ correct to the nearest ten.

Calculate the lower bound of P. Show your working clearly.

.....cm
(4)
(Total for question = 6 marks)

Q6.

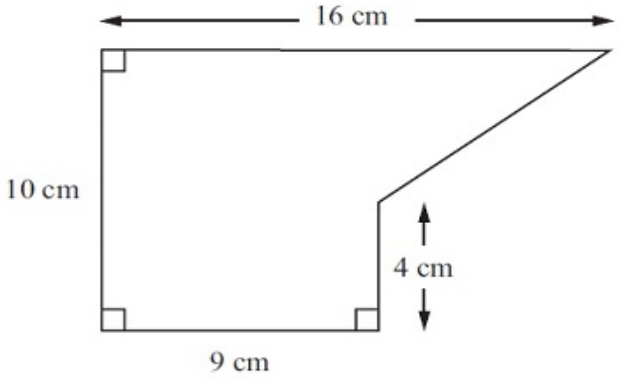

Diagram **NOT** accurately drawn

The diagram shows a shape.
Work out the area of the shape.

..... cm^2
(Total for question = 2 marks)

Q7.
A steam engine for pulling trains has wheels of diameter 1.5 metres.

(a) Calculate the circumference of a wheel.
Give your answer correct to 3 significant figures.

..... m
(2)

The steam engine travels 1200 metres along a test track.
(b) Work out the number of complete turns of the wheel.

.....
(2)
(Total for question = 4 marks)

Q8.
Here are two circles.

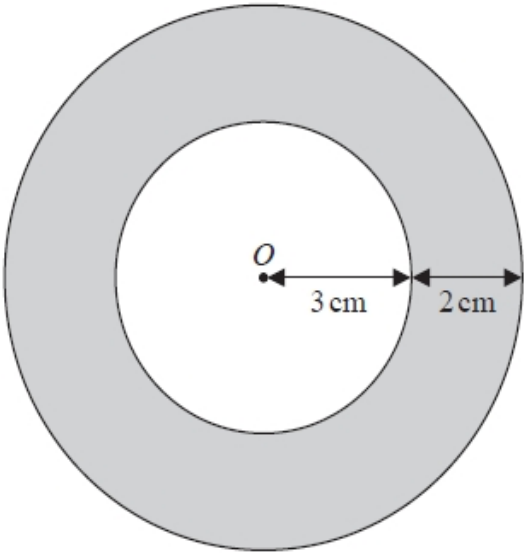

Diagram **NOT** accurately drawn

The circles have the same centre *O*.
The radius of the inner circle is 3 cm.
The width of the shaded region between the inner circle and outer circle is 2 cm.
Work out the area of the shaded region **in terms of pi.**

..... cm^2

(Total for question = 3 marks)

Q9.

The diagram shows sector *OAB* of a circle, centre *O*.

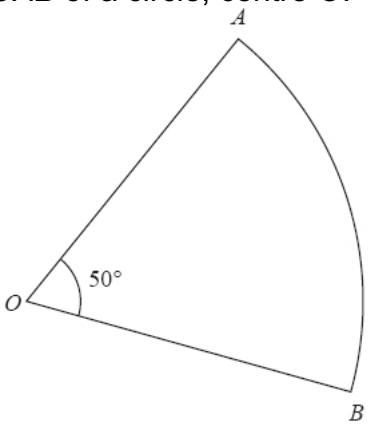

Diagram **NOT** accurately drawn

Angle *AOB* = 50°
Sector *OAB* has area 20π cm^2
Calculate the perimeter of sector *OAB*.
Give your answer correct to 3 significant figures.

..... cm

(Total for question = 5 marks)

Q10.

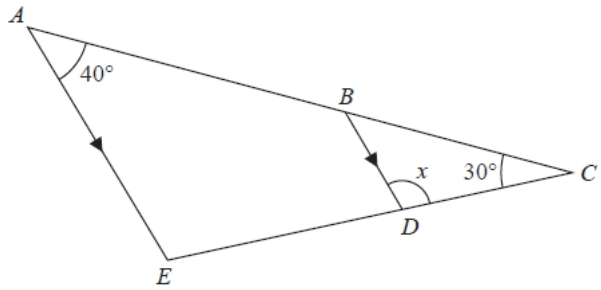

Diagram **NOT** accurately drawn

ABC and *EDC* are straight lines.
AE is parallel to *BD*.
Angle *EAC* = 40°
Angle *ACE* = 30°
Work out the size of angle *x*.
Give reasons with your calculations.

x = ...°

(Total for question = 3 marks)

Q11.
Here is a regular 10-sided polygon.

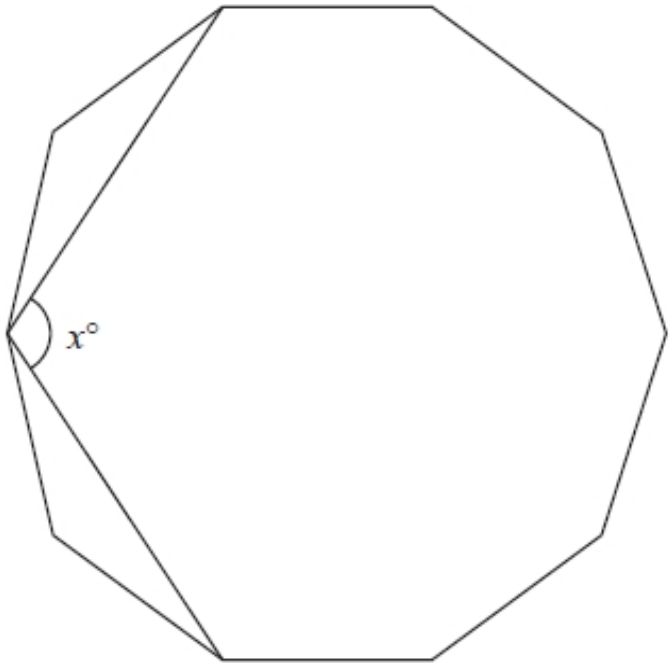

Diagram **NOT** accurately drawn

Work out the value of *x*.
Show your working clearly.

x = ...°

(Total for question = 4 marks)