DULWICH COLLEGE | SINGAPORE |

Year 9 Examination
Mathematics (Paper 1 - Core)
May 2017

Name:……
Time allowed: 1 hour 30 minutes. Calculators allowed.

Marks		**Teacher comment:**
	%	
Level/Grade		

Student Reflection:

1 Work out 7 – 2 x 4.

Answer ..... [1]

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2 Write as a decimal

(a) $\frac{7}{20}$,

Answer (a) ..... [1]

(b) 127%.

Answer (b) ..... [1]

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3 Factorise completely $8y - 12ty$.

Answer ..... [2]

4

In June 2000, one euro (€) was worth 0.59 British pounds (£).
Work out the value, in pounds, of a car which cost €12 800.
Give your answer to the nearest hundred pounds.

Answer £..... [3]

5

The population, P, of a city is 280 000, to the nearest ten thousand. Complete the statement about P.

Answer ..... $\leqslant P <$..... [2]

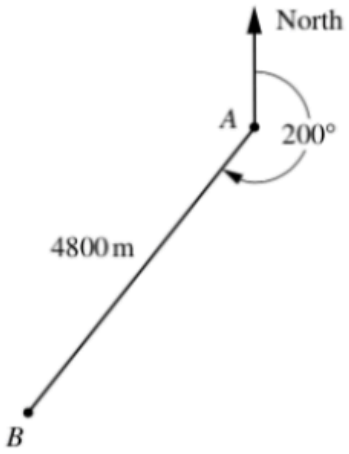
6

Solve the simultaneous equations $2c + 5d = 49$,
$3c + d = 15$.

Answer $c =$ .....

$d =$ ..... [4]

7



NOT TO SCALE

A railway line, between stations A and B, is straight and has a length of 4800 m.
The bearing of B from A is 200°.
The point P is due east of B and due south of A.

(a) Complete the sketch above to show triangle ABP. [1]

(b) Calculate the length of AP.

AP=.....m [3]

8

(a) The table below shows a pattern of numbers.
Fill in the two empty boxes.

1	2	3	4	5		n
3	5		9			$2n + 1$

[2]

(b) The new table shows another pattern of numbers.
Fill in the two empty boxes.

1	2	3	4	5		n
5	8	11	14			

[2]

9

Put one of the symbols $<$, $>$ or $=$ in each part to make these two statements correct,

(a) $\sqrt{0.0225}$ ..... 0.3 x 0.5, [1]

(b) 2.79^3 ..... 4.63^2. [1]

A spoon can hold 5 ml of medicine.

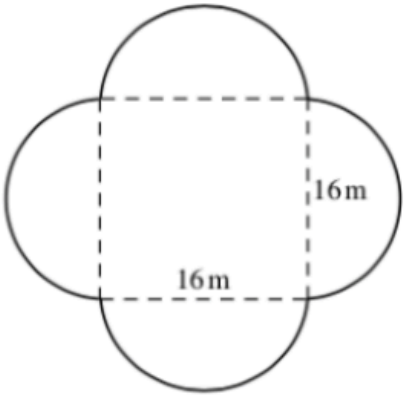
(a) Write 5 ml in litres.

Answer (a) ..... litres [1]

(b) Write your answer in standard form.

Answer (b) ..... litres [1]

11



NOT TO SCALE

The diagram shows a garden.
It is made up of a square of side 16 m and four semicircles of radius 8 m.

Calculate **(a)** the perimeter of the garden,

Answer (a) .....m [2]

(b) the area of the garden.

Answer (b) .....m^2 [3]

12

Work out $\frac{37^3+13^3}{37+13}$.

Answer..... [2]

13

The integer n is such that $-3 \leq n < 3$.
List all the possible values of n.

Answer..... [2]

14

An athlete's time for a race was 43.78 seconds.

(a) Write this time correct to

(i) one decimal place,

Answer (a) (i).....seconds [1]

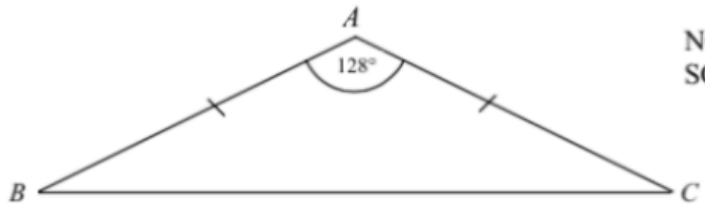
(ii) one significant figure.

Answer (a) (ii).....seconds [1]

(b) Write 43.78 and your answers to **(a)** parts **(i)** and **(ii)** in order, largest first.

Answer (b) .....>.....>..... [1]

15



NOT TO SCALE

In triangle ABC, $AB = AC$.

(a) What is the special name of this triangle?

Answer (a)..... [1]

(b) Angle $BAC = 128°$. Work out angle ABC.

Answer (b) Angle ABC =..... [2]

16

$$T = 2\sqrt{n}.$$

(a) Find T when $n = 25$.

Answer (a) $T =$..... [1]

(b) Make n the subject of the formula.

Answer (b) $n =$..... [2]

17

The population of Argentina is 3.164×10^7. Its area is 2.8×10^6 square kilometres.
Work out the average number of people per square kilometre in Argentina.

Answer.....people/km^2 [2]

18

(a) Factorise $40a - 8b + 32c$.

Answer (a) ..... [2]

(b) Solve the equations

(i) $x - 7 = 9$,

Answer (b) (i) $x =$ ..... [1]

(ii) $2(y + 1) = 3y - 5$.

Answer (b) (ii) $y =$ ..... [2]

19

(a) Write down the values of

$2^0 =$ ..... , $2^1 =$ ..... , $2^2 =$ ..... , $2^3 =$ ..... , $2^4 =$ ..... [2]

(b) Change $\frac{5}{49}$ to a decimal. Write down your full calculator display.

Answer (b) $\frac{5}{49} =$..... [1]

20

The frequency of radio waves (F) is connected to the wavelength (l) by the formula

$$F = \frac{300\,000}{l}.$$

(a) Calculate the value of F when $l = 1500$.

Answer (a) $F =$ ..... [1]

(b) Calculate the value of l when $F = 433$, giving your answer to the nearest whole number.

Answer (b) $l =$ ..... [3]