

DO NOT WRITE IN THIS AREA

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Answer ALL TWENTY TWO questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 (a) Write these numbers in order.
Start with the smallest number.

3 -8 1 -5 0

.....
(1)

- (b) Write these numbers in order of size.
Start with the smallest number.

2.5 2.85 2.082 2.28 2.805

.....
(1)

- (c) Find

(i) the value of $\sqrt{196}$

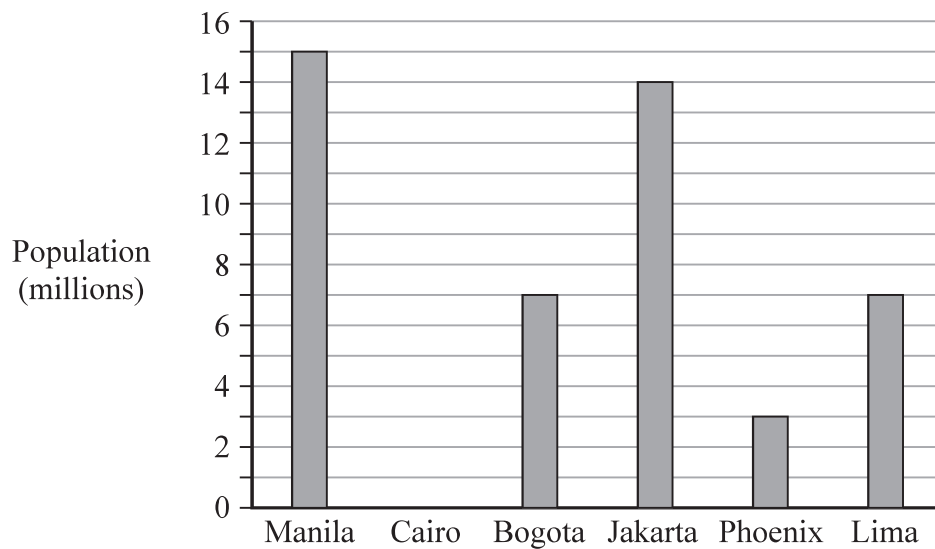
.....
(2)

(ii) the cube root of 6859

.....
(2)
(Total for Question 1 is 4 marks)



2 The bar chart gives information about the population, in millions, of each of five cities.



Cairo has a population of 12 million.

(a) Draw a bar on the bar chart to show this information.

(1)

The populations of two cities are equal.

(b) Write down the names of these two cities.

..... and

(1)

(c) Write down the name of the city with a population of 15 million.

.....

(1)

(d) Work out the difference in population between Jakarta and Phoenix.

..... million

(1)



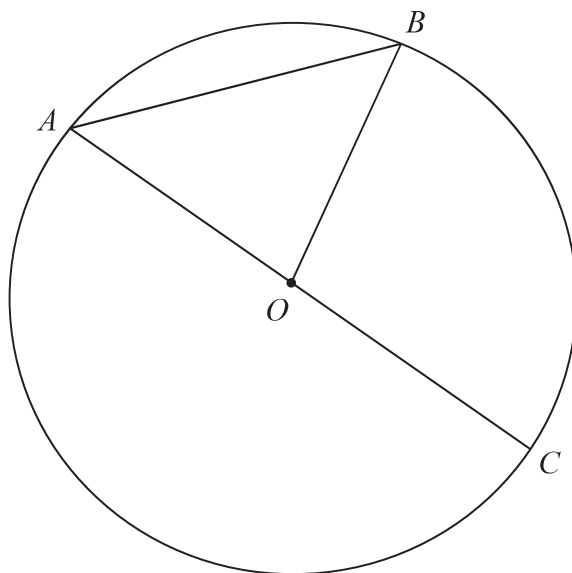
In Manila, there are 90 badminton clubs and 60 football clubs.

- (e) Find the ratio of the number of badminton clubs to the number of football clubs.
Give your ratio in its simplest form.

.....
(2)

(Total for Question 2 is 6 marks)

- 3 A , B and C are points on a circle, centre O .
 AOC is a straight line.



- (a) Write down the mathematical name for the line AC .

.....
(1)

- (b) Write down the mathematical name for the line AB .

.....
(1)

- (c) On the diagram, shade a sector of the circle.

(1)

(Total for Question 3 is 3 marks)



4 Here are five road signs.



A



B



C



D



E

One of these five road signs has one line of symmetry.

(a) Write down the letter of this road sign.

.....
(1)

One of these five road signs has an order of rotational symmetry greater than 1

(b) (i) Write down the letter of this road sign.

(ii) Write down the order of rotational symmetry of this road sign.

.....
(2)

Road sign E is in the shape of a polygon with 8 sides.

(c) Write down the name of a polygon with 8 sides.

.....
(1)

(Total for Question 4 is 4 marks)

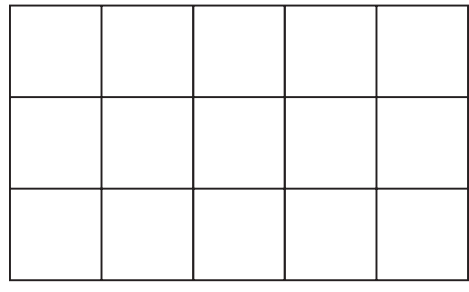


5 (a) Which one of these fractions is equivalent to $\frac{4}{5}$?

- $\frac{20}{24}$
- $\frac{8}{12}$
- $\frac{1}{2}$
- $\frac{16}{20}$
- $\frac{6}{10}$

..... (1)

Here is a shape made of squares.



(b) Shade $\frac{4}{5}$ of the shape.

(1)

(c) Write $\frac{4}{5}$ as a percentage.

.....% (1)

$\frac{4}{5}$ of a number is 48

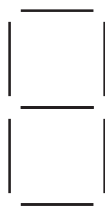
(d) What is the number?

..... (2)

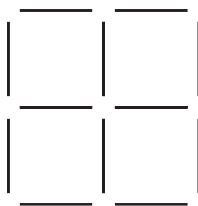
(Total for Question 5 is 5 marks)



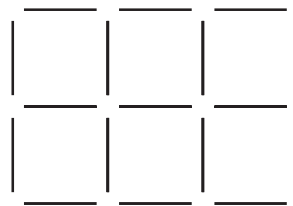
6 Here is a sequence of patterns made from sticks.



Pattern number 1



Pattern number 2



Pattern number 3

(a) In the space below, draw Pattern number 4

(1)

(b) How many sticks are needed to make Pattern number 7?

(2)

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(c) Work out the Pattern number of the pattern made from exactly 62 sticks.

.....
(2)

Pedro says,

“There will be a pattern in the sequence with exactly 123 sticks.”

(d) Is Pedro correct?

You must give a reason for your answer.

.....
.....
.....
(1)

(Total for Question 6 is 6 marks)

