St Anselm's College

Maths Sample Paper 1

1 hour

No Calculator Allowed

1) Bangladesh is densely populated with about 169,400,000 people. Write this number in words.

(1 mark)

2) More accurately, the population of Bangladesh in May 2023 was 169,405,374 people. Write that number in words.

(1 mark)

3) Write the next number for each of the following sequences.

a)   2   5   8   11   14   ☐   *(1 mark)*

b)   3   6   12   24   48   ☐   *(1 mark)*

c)   7   6.6   6.2   5.8   5.4   ☐   *(1 mark)*

d)   2   -4   8   -16   32   ☐   ☐   *(2 marks)*

e)   To make the sequence in part (d) you multiply by the same number each time. What is the number?

(1 mark)

4) Work out the following (show your working out in the box below each question):

a)   Add together **3.7** and **6.5**   _____

```
┌────────────────────────────────────────────────┐
│                                                │
│                                                │
│                                                │
└────────────────────────────────────────────────┘
```
(1 mark)

b)   Subtract **5.7** from **15.2**   _____

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┌────────────────────────────────────────────────┐
│                                                │
│                                                │
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└────────────────────────────────────────────────┘
```
(1 mark)

c)   Multiply **254** by **5**   _____

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┌────────────────────────────────────────────────┐
│                                                │
│                                                │
│                                                │
└────────────────────────────────────────────────┘
```
(1 mark)

d)   Divide **342** by **6**   _____

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┌────────────────────────────────────────────────┐
│                                                │
│                                                │
│                                                │
└────────────────────────────────────────────────┘
```
(1 mark)

5) Work out the following:

The number 6 is half way between 4.5 and 7.5	
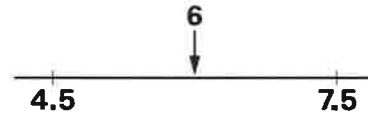
Fill in the missing numbers below:

a) The number 6 is half way between 3.2 and ⬜

(1 mark)

b) The number 6 is halfway between -1 and ⬜

(1 mark)

Now work out the number that is half way between 38×50 and 42×50

Show your working.

(2 marks)

6) Fill in the missing numbers.

$$\frac{1}{2} \text{ of } 50 = \frac{1}{4} \text{ of } \boxed{}$$

$$\frac{3}{4} \text{ of } 24 = \frac{1}{2} \text{ of } \boxed{}$$

$$\frac{1}{5} \text{ of } 48 = \frac{2}{5} \text{ of } \boxed{}$$

(3 marks)

Now fill in the missing numbers to make each calculation correct.

$$2.9 + \underline{} = 5.15$$

$$\frac{8}{18} - \underline{} = \frac{5}{18}$$

$$4 \times \underline{} = 0.32$$

(3 marks)

7) Solve the following:

a) I think of a number, divide it by 4 and then subtract 1. The result is 20. What was the number I first thought of?

(2 marks)

b) What number must m be to make this mathematical statement true?

$5m + 2 = 2m + 14$

(2 marks)

8) Look at these angles:
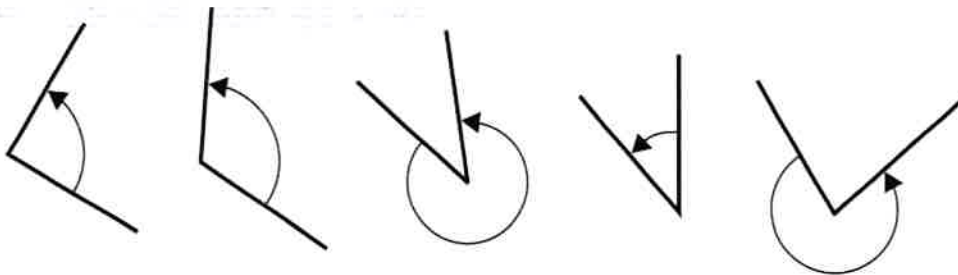
angle P   angle Q   angle R   angle S   angle T

One of the angles measures about 130°
Circle which angle it must be *and* write the name of this type of angle below.

(2 marks)

9) Fill in the calculations below to complete each number sentence using any of the following. They may be used more than once.

x10,   x100,   x1000,   ÷10.   ÷100,   ÷1000

a) 2700 .... = 2.7

b) 45 .... = 4500

c) 0.29 = 290 ....

(3 marks)

For this question you need to choose a value of your own for the first blank space and then one of the operations above for the second to make the equation work.

d) 0.4 = ...

(1 mark)

10) Work out the following:

Kat has 3 times as much money as Gill
Kat then spends £14
Kat now has as much money as Gill
Work out how much money Kat has now.

(2 marks)

11) For the following questions you need to decide if they are TRUE or FALSE. If they are false you need to give a calculation that disproves the theory. Show your working out.

a) The sum of an odd number and an odd number is odd	
TRUE / FALSE	Working Out

b) The product of two square numbers is never odd	
TRUE / FALSE	Working Out

c) The sum of two prime integers is always an even integer	
TRUE / FALSE	Working Out

(5 marks)

12) Round each of the following measurements to the accuracy given in brackets.

a)   19.5 cm   (nearest cm)

b)   14,499 km   (nearest one thousand km)

c)   0.43 cm   (nearest mm)

(3 marks)

13) Write the following numbers in order of size, starting with the largest.

0.41 $\dfrac{2}{5}$ 0.409 $\dfrac{43}{100}$ 0.5

(2 marks)

14) Look at this multiplication. It shows how you can write 1980:

$2 \times 2 \times 3 \times 3 \times 5 \times 11 = 1980$

a) Write 198 in the same way by filling in the gaps below.

2 × 3 x ☐ x ☐ = 198

(2 marks)

b) Write down the answer to 1980 ÷ 55

(1 mark)

15) On a farm 400 sheep gave birth. 80% of the sheep gave birth to two lambs. The rest of the sheep gave birth to one lamb. In total how many lambs were born? Show your working out.

(3 marks)

16) In January 2023 Fred's age was 2 times Ruby's age. Lissa was 6 years older than Ruby and Lissa was 3 years younger than Fred. How old were the three people in January 2023?

(3 marks)

17) In America, there are coins called <u>nickels</u> that are each worth 5 cents. These coins are called nickels because they are made of cupronickel. (There are 100 cents in one dollar).

(a) Altogether, how many nickels make 3 **dollars?** _____

(b) Laura has 100 nickels. How many dollars is that? _____

(c) Dev wants to change 4 ½ **dollars** into nickels.
How many nickels should he get? _____

(3 marks)

18) Look at the list of numbers below.

9   13   27   37   49   50   75

a) Which two of the numbers have only two factors?

(2 marks)

b) Give another example of a number with only two factors.

(1 mark)

c) These numbers have a special name. What is it?

(1 mark)

d) Which two of the numbers are square numbers?

(2 marks)

e) Using each of the **three** numbers in the list once (9, 27, 50) and any of the four operations (+ − ÷ ×) show how you can make 47.
(Use each number **only once**. You can use any of the + - × ÷ as many times as you like and you do not need to use all of them).

(2 marks)

19) The Diagram shows four different sized barrels.

Barrel A holds   Barrel B holds   Barrel C holds   Barrel D holds
54 gallons   **36** gallons   **18** gallons   **9** gallons

Write the missing fractions as simply as possible.

The first one is done for you.

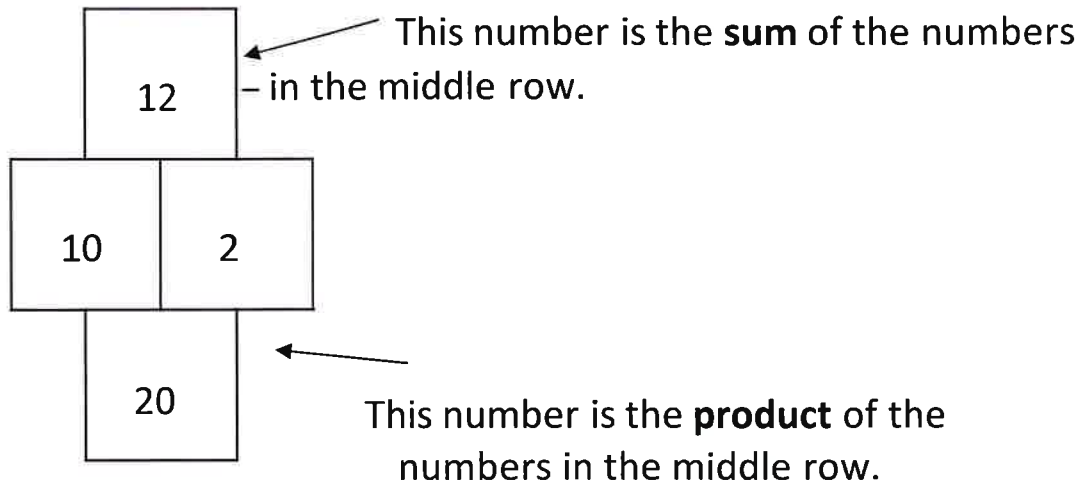Barrel **C** holds $\dfrac{1}{2}$ of the amount barrel **B** holds

Barrel **D** holds   _____   of the amount barrel **A** holds

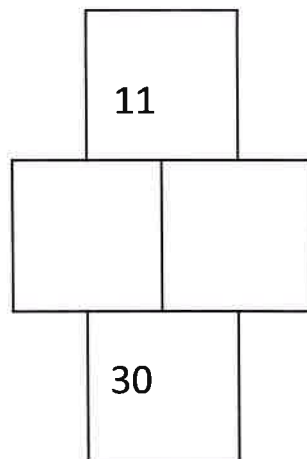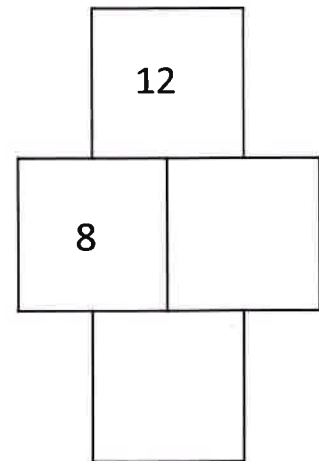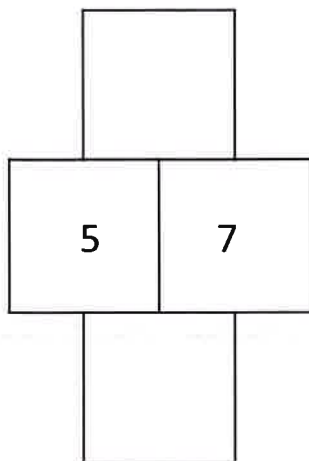Barrel **C** holds   _____   of the amount barrel **A** holds

Barrel **B** holds   _____   of the amount barrel **A** holds

(3 marks)

20) Here are the rules for a number grid.

```
      ┌──────┐
      │  12  │ ←──── This number is the sum of the numbers
      └──────┘       in the middle row.
   ┌──────┬──────┐
   │  10  │   2  │
   └──────┴──────┘
      ┌──────┐
      │  20  │ ←──── This number is the product of the
      └──────┘           numbers in the middle row.
```

Use the rules to write the missing numbers in these number grids.

Grid 1: top empty; middle row 5 and 7; bottom empty.

Grid 2: top 12; middle row 8 and empty.

Grid 3: top 11; middle row empty and empty; bottom 30.

(3 marks)

21) Work out the following:

a) Show that **9** x **28** is **252**

_____

(1 mark)

b) What is **27** x **28**?

You can use part (a) to help you.

_____

(2 marks)

22) (a) Henry thinks of a number between 1 and 20.
He thinks of the number 7
For each questions below, tick (✓) Yes or No for Henry's number.

	Yes	No
Is it an odd number?		
Is it a multiple of 3?		
Is it a factor of 28?		

(3 marks)

(b) Ashraf also thinks of a number between 1 and 10

The table shows information about his number.

	Yes	No
Is it an odd number?		✓
Is it a multiple of 3?	✓	
Is it a factor of 28?		✓

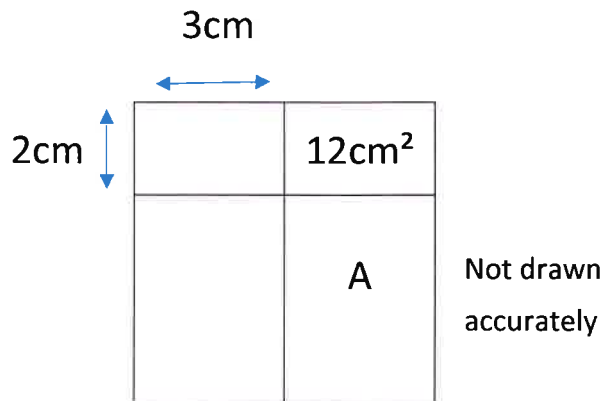What is Ashraf's number?

(1 mark)

23) Work out the area of the rectangle marked A.

The diagram shows a square.

Two straight lines cut the square into four rectangles.

The area of one of the rectangles is shown.

Not drawn accurately

What is the area of the rectangle marked A?

_____

(3 marks)

Use this box for your working out:

END OF EXAMINATION

Go back through the paper and check for mistakes.