Bishops Online Tutoring

Education Consultancy

Edexcel GCSE Mathematics

FACTORS, MULTIPLES & PRIMES

Materials Required:

- Pen
- HB Pencil
- Ruler (in centimetres and millimetres)
- Protractor
- Compass

Instructions:

- Use a black ink pen to answer all questions
- Fill your name in the section below
- Answer the questions in the spaces provided
- Show your working out for all answers

Information:

- The marks allocated for each question are displayed within brackets – utilise this information to gauge the appropriate amount of time to dedicate to each question
- Questions marked with an asterisk (*) will assess your written communication; be careful of spelling, punctuation and grammar with these questions
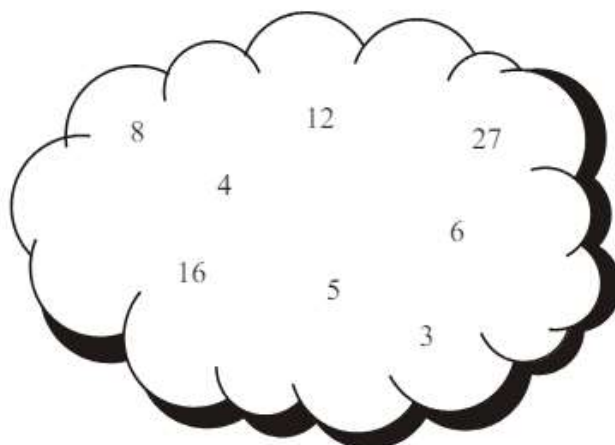
Advice:

- Carefully read the question before attempting to answer it
- Be vary of time and try to answer every question
- If you have enough time in the end, go back and check your answers. A good way to check your answers is to retry the question with the hope of getting the same answer as before without looking at your working out from before

NO CALCULATOR ALLOWED

NAME:

1.

Using only the numbers in the cloud, write down

(i)   all the multiples of 6, ... 6, 12 ....

(ii)   all the square numbers, ... 4, 16 ....

(iii)   all the factors of 12, ... 3, 4, 6, 12 ......

(iv)   all the cube numbers.   .... 8, 27 ....

(4 marks)

2.   Here is a list of numbers.

   2   5   7   8   9   12

Write down a number from the list which is

(i)   a multiple of 6, ... 12 ....

(ii)   a factor of 15, ... 5 ....

(iii)   a square number.   .... 9 ....

(3 marks)

3.   Here is a list of numbers.

   3   8   11   25   33   41

Write down a number from the list which is
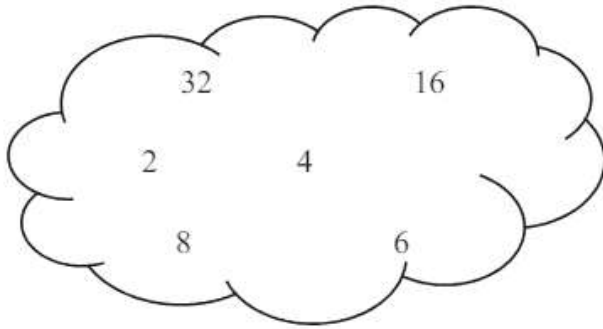
(a)   an even number, ... 8 ....

(1)

(b)   a square number, ... 25 ....

(1)

(c)   a multiple of 11   .... 11 or 33 ....

(1)

(3 marks)

4.

From the numbers in the cloud, write down

(a) a square number,

$\underline{4 \ or \ 16}$

(1)

(b) the square root of 16,

$\underline{4}$

(1)

(c) the cube of 2,

$\underline{8}$

(1)

(d) the prime number.

$\underline{2}$

(1)
(4 marks)

5.

2   3   4   5   6   7   8

From the list of numbers, write down

(i) the square number,

$\underline{4}$

(ii) the cube number,

$\underline{8}$

(iii) the square root of 9.

$\underline{3}$

(3 marks)

6. Here is a list of numbers.

17   24   25   26   35   43   44

From the numbers in the list, write down

(i) the odd number that is larger than 40,

43

(ii) the number that is a multiple of 7,

35

(iii) two numbers that have a difference of 20,

24 & 44

(iv) the number that has the same value as $2 + 3 \times 5$

3 × 5 = 15   15 + 2 = 17   *17*

(4 marks)

7. Here is a list of numbers.

8   15   23   27   32   33

From the numbers in the list, write down a number that is prime.

23

(1 marks)

8.

18		42
	9	
		3
	12	
6		81
	11	30
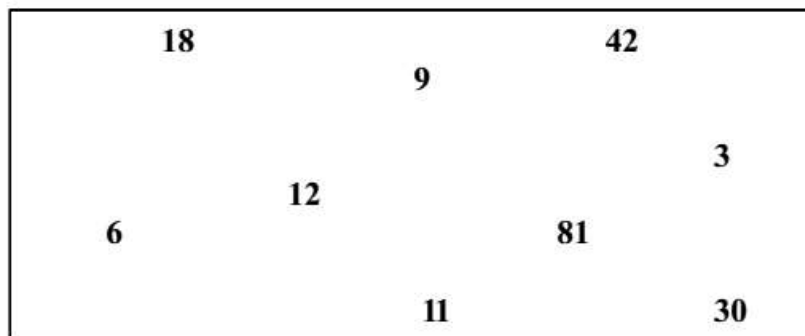
From the numbers in the rectangle,

(i) write down a multiple of 4,   *12*

(ii) write down a factor of 21,   *3*

(iii) write down a prime number.   *3 or 11*

(3 marks)

9.   Here is a list of eight numbers.

          5   6   12   20   25   26   28   33

(a)   From the list, write down

      (i)   a square number,

                                                      _25_

      (ii)   a number that is a multiple of 7,

                                                      _28_

      (iii) **two** numbers that are factors of 40,

                                              _5_ and _20_

      (iv)   **two** numbers with a sum of 59.

                                              _26_ and _33_
                                                              (4)

(b)   Tony says that "6 is a cube number because $2^3 = 6$".
      Tony is wrong. Explain why.

      $2^3 = 2 \times 2 \times 2 = 8$, not 6
                                                              (1)
                                                     (5 marks)

10.

8		
9		10
	12	
30		3
5		20

Using only the numbers in the rectangle, write down

(i)   an even number

                                        8, 10, 12
                                        20 or 30

(ii)   a multiple of 4

                                        8, 12 or 20

(iii) a factor of 15

                                        3 or 5

                                                     (3 marks)

11.

| factor | multiple | square | square root | half |

(a) Use a word from the list above to complete the following sentence.

10 is a ....*multiple*........ of 5

(1)

(b) From the list below, write down the odd number.

10   15   18   20   24

................15................

(1)

(c) From the list below, write down the square number.

10   12   14   16   18   20

.........16.........

(1)

(3 marks)

12. Here is a list of numbers.

2   4   5   6   7   8

From the list of numbers write down

(i) an odd number   ....5 or 7........

(ii) a square number   ....4................

(iii) a multiple of 3   ....6................

(iv) a factor of 10   ....2 or 5........

(4 marks)

13. Here is a list of 8 numbers.

4   7   10   16   18   20   21   32

From the numbers in the list write down a number that is

(i) an odd number   ....7 or 21........

(ii) a multiple of 5   ....10 or 20........

(iii) a square number   ....4 or 16........

(iv) a factor of 42   ....7 or 21........

(4 marks)

14. Here is a list of 8 numbers.

    3   5   6   8   9   10   11   16

From the list, write down

(a) **two** odd numbers,

    ...3... and ...5...
    or 9 or 11   (1)

(b) **two** numbers with a sum of 15

    ...5... and ...10...
    or 6 or 9   (1)

(c) a factor of 12

    3 or 6   (1)

(d) a multiple of 4

    8 or 16   (1)

James says that 10 is a square number because $5^2 = 10$

(e) James is wrong.
    Explain why.

    $5^2 = 5 \times 5 = 25$

    (1)
    (5 marks)

15. (a) Here is a list of numbers.

3	5	7	8	9	10	12

From the list of numbers, write down

(i) a multiple of 6 12

(ii) a factor of 14 7

(iii) a square root of 25 5

(3)

(b) Scott says

'If you add two different square numbers, you will always get an even number.'

Show that Scott is **wrong**.

4 is a square number and so is 9,
4 + 9 = 13, 13 is an odd number

(2)

(5 marks)

16. Here is a list of numbers.

2   5   8   10   13   14   16   18

(a) From the list, write down

(i) an odd number, ... 5 or 13

(ii) the multiple of 6, ... 18

(iii) the square number. 16

(3)

Erin says that 8 is a prime number.

(b) Erin is wrong.
Explain why.

8 is divisible by 1, 2 and 4;
prime numbers are only divisible by
1 and themselves.

(1)

(4 marks)