

YOUR NAME : _____

Summer Examinations 2024

Exams start Monday 10th June 2024

Lesson 4

4.1 TEST

Question 1

The factors of 20 are the whole numbers that divide into 20 exactly without remainder.
There are six of them.
List them all.

[5 marks]

Question 2

A prime number only divides by itself and 1.

Next to each of the following numbers write either PRIME or NOT PRIME.

7

9

13

22

27

[5 marks]

Question 3

The factors of 40 are { 1, 2, 4, 5, 8, 10, 20, 40 }

The factors of 60 are { 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60 }

What is the Highest Common Factor of 40 and 60 ?

[5 marks]

Question 4

- (i) What is 25% of £48 ?
- (ii) What is 50% of £450 ?
- (iii) What is 10 % of £90 ?
- (iv) What is $33\frac{1}{3}\%$ of £90 ?
- (v) What is 75% of £20 ?

[10 marks]

Question 5

Multiples of 6 = { 6, 12, 18, 24, 30, 36, 42, 48, 56, 60, }

- (a) List the first 10 multiples of 4.
- (b) What is the Lowest Common Multiple of 4 and 6 ?

[5 marks]

Question 6

- (i) What is the sum of the interior angles in any triangle ?
- (ii) How many degrees are in a right angle ?
- (iii) What is the sum of the interior angles in any quadrilateral ?
- (iv) How many sides has an hexagon ?
- (v) What is the sum of the interior angles in a regular pentagon ?

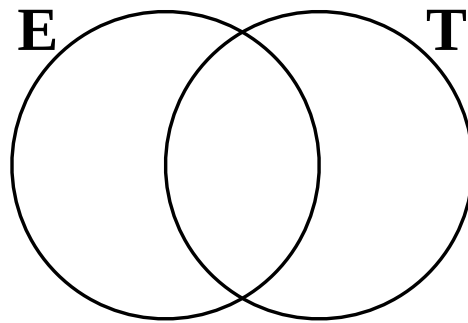
[5 marks]

Question 7

- (a) On a Venn Diagram to show the relationship between the sets E and T where $E = \{ \text{The factors of 18} \}$ and $T = \{ \text{The factors of 30} \}$

$$E = \{ \quad , \quad , \quad , \quad , \quad , \quad \}$$

$$T = \{ \quad , \quad , \quad , \quad , \quad , \quad , \quad , \quad \}$$



- (b) List the elements of

(i) $E \cap T$

(ii) $E \cup T$

(iii) $E \cap T'$

[10 marks]

Question 8

Expand the brackets;

$$(3x + 5)(4x + 2)$$

[5 marks]

Question 9

- (i) Divide 90 in the ratio 4 : 5
- (ii) Divide 49 in the ratio 3 : 4
- (iii) Divide 45 in the ratio 2 : 3
- (iv) Divide 110 in the ratio 3 : 7
- (v) Divide 35 in the ratio 2 : 5

[5 marks]

Question 10

Write down the next three terms is each of these Arithmetic Progressions;

- (i) 1, 4, 7, 10, _____, _____, _____
- (ii) 112, 119, 126, 133, _____, _____, _____
- (iii) 17, 13, 9, 5, _____, _____, _____
- (iv) 1.0, 2.1, 3.2, 4.3, _____, _____, _____
- (v) - 9, - 7, - 5, - 3, _____, _____, _____

[5 marks]

Question 11

Showing full working, calculate

(i)

$$\frac{3}{4} - \frac{2}{3}$$

(ii)

$$\frac{4}{11} + \frac{4}{9}$$

(iii)

$$\frac{6}{7} - \frac{3}{10}$$

(iv)

$$\frac{3}{8} + \frac{2}{5}$$

[3 marks each = 12 marks]

Question 12

What is the cost of eight Energy Drinks at £1.95 each ?

[4 marks]

Question 13

A Film starts at 18:45 and finishes at 20:20.

How long, in hours and minutes, is the film ?

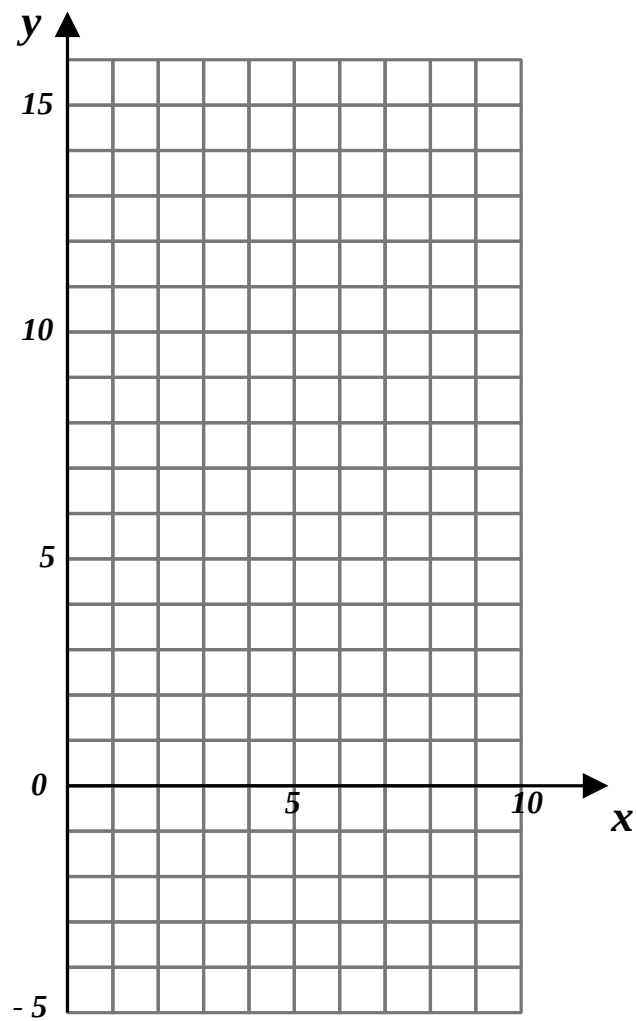
[5 marks]

Question 14

(a) Complete this table

x	0	1	2	3	4	5	6	7	8	9	10
$y = 1.5x - 2$				2.5							

(b) Use your table to plot the line with equation $y = 1.5x - 2$



[8 marks]

Question 15

Solve these equations;

(i) $3x + 8 = 35$

(ii) $7x - 8 = 27$

(iii) $7x + 42 = 28$

(iv) $6x - 1432 = 5234$

[8 marks]

Question 16

The number 90 can be written as a *product of primes*.

That is, $90 = 2 \times 3^2 \times 5$

Write each of the following numbers as a *product of primes*.

(i) 180

(ii) 98

[8 marks]

Question 17

Pedro says “Simplify using the fact that when you multiply same base indices add”.

Like this; $3^5 \times 3^4 = 3^9$

In a similar style, simplify;

(i)

$$7^3 \times 7^5$$

(ii)

$$13^6 \times 13^4 \times 13^7$$

(iii)

$$31 \times 31 \times 31 \times 31$$

(iv)

$$17^5 \times 17 \times 17^2$$

(v)

$$3^3 \times 3 \times 3^5$$

(vi)

$$11^8 \times 11^0$$

(vii)

$$5^8 \times 5^{-3}$$

(viii)

$$11^{-6} \times 11^{-5}$$

(ix)

$$3^6 \times 3^{-6}$$

(x)

$$(7^3)^5$$

[10 marks]