AECS MAGNOLIA MAARUTI PUBLIC SCHOOL
Arekere, B. G. Road, Bangalore-76
SA1- Model Question paper 2022-23
Subject: Mathematics

MAGNOLIA MAARUTI
PUBLIC SCHOOL

Grade: VI
**Date: 09/09/22**

General Instructions:-
➢ **All questions are compulsory.**

Section-A

1. The product of any natural number and the smallest prime is
   (a) an even number (b) an odd number
   (c) a prime number (d) None of these

2. The number of angles in the given figure is
   (a) 3 (b) 4 (c) 5 (d) 6

3. The number of edges of a triangular pyramid is
   (a) 3 (b) 4 (c) 6 (d) 8

4. a and b are two co-primes. Which of the following is/are true?
   (a) Multiple (a, b) = a × b (b) factor (a, b) = 1
   (c) Both (a) and (b) (d) Neither (a) nor (b)

5. The number of triangles in the figure is
   (a) 10 (b) 12 (c) 13 (d) 14

6. Which of the following is not twin-prime?
   (a) 3, 5 (b) 5, 7 (c) 11, 13 (d) 17, 23

7. Which of the following statement is true?
   (a) The whole number 0 has no predecessor.
   (b) There are 10 whole numbers between 11 to 21.
   (c) The successor of a two digit number is always a two digit number.
   (d) The predecessor of a two digit number is never a single digit number.

8. The sum of the prime factors of 1729 is
   (a) 13 (b) 19 (c) 32 (d) 39

9. Which of the following is co-prime?
   (a) 8,10 (b) 9,10 (c) 6,8 (d) 15,18

10. The difference between the successor and the predecessor of a number is
    (a) 1 (b) 2 (c) -1 (d) – 2.

11. Which of the following number is not a factor of 150
    (a) 25 (b) 12 (c) 30 (d) 15

12. Which of the following will not represent zero?
    (a) $0 + 1$ (b) 0×0 (c) $\frac{0}{2}$ (d) $\frac{2-2}{2}$
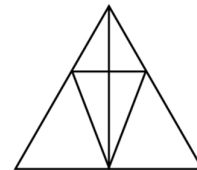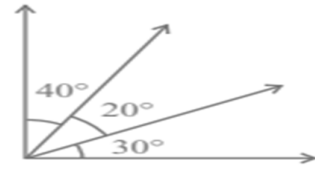
13. $2 \times (3 + 4) = (2 \times 3) + (2 \times 4)$ The above is known as
(a) distributivity of multiplication over addition
(b) associativity of addition (c) associativity of multiplication (d) none of these.

14. Write the correct number to complete $13 \times 100 \times$_____ = 1300000

(a) 1000   (b) 10   (c) 100000   (d) 100

15. The number of right angles turned through by hour hand of a clock when it goes from 5 to 8 is _____
(a) one   (b) two   (c) three   (d) none of these

16. Study the pattern $1 \times 8 + 1 = 9$; $12 \times 8 + 2 = 98$ next step is

(a) $123 \times 8 + 4 = 987$ (b) $12 \times 8 + 3 = 987$ (c) $12 \times 8 + 4 = 987$ (d) $123 \times 8 + 3 = 987$

17. How many degrees are there in one-third of right angle?
(a) 30°   (b) 60°   (c) 0°   (d) 90°

18. In the given figure the lengths of two pencils, A and B is _____
(a) Pencil A = pencil B = 7 cm
(b) Pencil A = pencil B = 8 cm
(c) Pencil A = 9cm, pencil B = 7 cm
(d) Pencil A = 11cm, pencil B = 9 cm

19. The end point of the same side of a polygon are called _____
(a) adjacent sides (b) adjacent vertices (c) diagonals (d) adjacent angles.

20. Predecessor of smallest whole number _____
(a) 1   (b) 0   (c) 2   (d)does not exist

21. The smallest number of two digit which is a multiple of three
(a) 99   (b) 10   (c) 12   (d)11

22. Least prime number is
(a) 0   (b) 1   (c) 2   (d) 3

23. How many whole numbers are there between 53 and 72.
(a) 18   (b) 19   (c)20   (d)17

24. Assertion(A)-
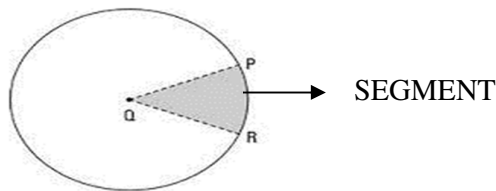
SEGMENT

Reasons(R)- A region in the interior of a circle enclosed by a chord and an arc is a segment of the circle.
a)Both A and R are true and R is the correct explanation of A
b)Both A and R are true and R is not the correct explanation of A
c)A is true but R is false.
d)A is false but R is true.

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25.	Assertion(A)- If the product of two whole numbers is 1, we can say that one of of them is 1.
	Reasons(R)- You can multiply two whole numbers in any order.
	a)Both A and R are true and R is the correct explanation of A
	b)Both A and R are true and R is not the correct explanation of A
	c)A is true but R is false.
	d)A is false but R is true.
26.	Assertion(A)- The multiples of 7 are 7,14,21,28…..
	Reasons(R)- Every multiple of a number is greater than or equal to that number.
	a)Both A and R are true and R is the correct explanation of A
	b)Both A and R are true and R is not the correct explanation of A
	c)A is true but R is false.
	d)A is false but R is true.
	Q27-Q30
	Answer the following questions using the given diagram:
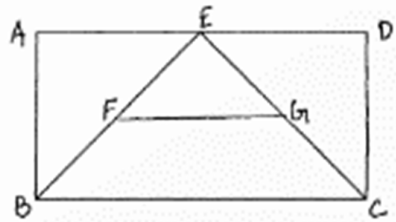
27.	How many line segments are there in the figure.
	$a)2$ $b)5$ c)13 $d) 8$
28.	How many triangles are there in the figure.
	$a)3$ b)4 $c) 5$ $d) 6$
29.	How many quadrilaterals are there in the figure.
	$a)1$ $b)2$ $c) 3$ d) 4
30.	How many vertices are there in the figure.
	a)7 $b)6$ $c) 5$ $d) 4$

Section-B

1. Thomas has tennis match every 4th day and Maria has tennis match every 7th day. When will they have a match on the same day?

   Thomas has a tennis match every 4th day

   so, Thomas play match after - 4, 8, 12, 16, 20, 24, 28, 32..days

   and Maria has tennis every **seventh** day

   so, Maria play match after - 7, 14, 21, 28, 35, 42,..days

   now **least common multiple** of both are 28

   so,they **both** have play match on the **28th** day

2. India's population has been steadily increasing from 439 millions in 1961 to 1028 millions in 2001. Find the total increase in population from 1961 to 2001. Write the increase in population in Indian System of Numeration, using commas suitably.

   Given, population of India in 1961 = 439 million

   = 439 × 1000000 = 439000000 [∵ 1 million = 1000000]

   and population of India in 2001 = 1028 million

   = 1028 × 1000000 = 1028000000 [∵ 1 million = 1000000]

   ∴ Total increase in population from 1961 to 2001

   = Population in 2001 - Population in 1961

   = 1028000000 - 439000000 = 589000000

   = 589 × 1000000 = 589 million

   So, the increase in population according to the Indian System of Numeration = 58,90,00,000.

3. a) How many millions make 3 crores?

   1 crore =1,00,00,000

   ∴ 3 crores =3×1,00,00,000

   =30000000

   =30×1000000

   =30×1 millions   (since 1000000=1 million)

   =30 millions

   b) Estimate each of the following products by rounding off each number to nearest tens: 1385 × 789

   Nearest ten's round off **1385** is **1390** and round off **789** is **790**

   So, rounded the total nearest is **=1390×790=1098100**
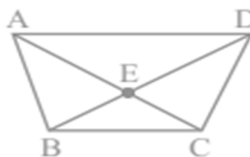
4. In the given Figure find,

   (a) What is AE + EC?

   (b) What is AC – EC?

   (c) What is BD – BE?

   (d) What is BD – DE?

As points A, E and C are collinear and point E divides AC in two parts such that AE and EC are two parts.

Similarly, as points B, E and D are also collinear and point E divides BD in two parts such that BE and ED are two parts

(a). AE+EC=AC

(b). AC-EC=AE

(c). BD-BE=ED

(d). BD-DE=BE

5. Find the product using the properties of whole number:1800 × 499

1800×499

1800×(500-1)

1800×500-1800×1

9,00,000-1800

8,98,200

6. Determine if 1375 is divisible by 55.

Factors of 55 are 11 × 5 =55
Test of divisibility for 5:
1375 ends with 5.So,1375 is divisible by 5.
Test of divisibility for 11:
Sum of odd-5+3=8
Sum of even-7+1=8
Difference=8-8=0/11=0
1375 is divisible by 11.
Hence 1375 is divisible by 55.
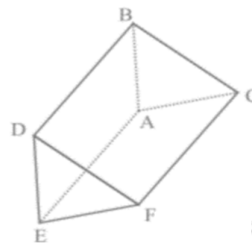
Section -C

7. Write the name of
    (a) vertices -6
    (b) edges-9, and
    (c) faces -5 of the prism

8. 48 students are going on a zoo trip. What are the ways to organize them into equal groups?

2×24=48

3×16=48

4×12=48

6× 8=48

So students can make a group of 2s,3s, 4s,6s and 8s with 24,16,12,8 and 6 students respectively.

9. A loading tempo can carry 482 boxes of biscuits weighing 15kg each, whereas a van can carry 518 boxes each of the same weight. Find the total weight that can be carried by both the vehicles.

Tempo can carry 482 boxes weighing 15 kg each.

Therefore Total weight tempo can carry =482×15 kg

Van can carry 518 boxes, weighing 15 kg each.

Therefore, total weight van can carry =518×15 kg

$$=(482×15) + (518×15)$$
$$= 15 (482 +518)$$
$$=15 × 1000=15000 \text{ kg}$$

Weight of total biscuits that can be carried by both vehicles =15000kg

Hence, the total weight that can be carried by both the vehicles is 15000kg.

10 Write all the factors of 56 and check whether the given number is a perfect number or not ?

The factors of 56 are 1, 2, 4, 7, 8, 14, and 28.

The number 56 is not a perfect number. The proper divisors of 56 are all of the divisors of 56 that are not equal to 56. These include 1, 2, 4, 7, 8, 14, and 28.

1 + 2 + 4 + 7 + 8 + 14 + 28 = 64

The sum of the proper divisors of 56 is 64, not 56, so 56 is not a perfect number.

11 Express the following as the sum of:

a)twin primes: 24

prime numbers which differ by 2 are called twin prime

11 +13=24,11 and 13 are twin prime

b)two odd primes: 36

19 and 17 are two odd prime numbers.

19+=17=36

12 Fill in the blank cells of the following magic squares:

15	8	13
10	12	14
11	16	9

Diagonal:11+12+13=36.So,sum of the rows and columns must be 36

R1: 36-(8+13)=15

C1:36-(14+11)=10

R2: 36-(10+12)=14

C2:36-(12+8)=16

R3: 36-(11+15)=9

OR

In a five digit number, digit at ten's place is 4, digit at unit's place is one fourth of ten's place digit, digit at hunderd's place is 0, digit at thousand's place is 5 times of the digit at unit's place and ten thousand's place digit is double the digit at ten's place. Write the number.

Digit at ten's place =4

Digit at units place =$\frac{1}{4}$ th of ten's place

$$=\frac{1}{4}\times4 = 1$$

Digit at hundreds place =0

Digit at thousand's place =5× units place

$$=5\times1=5$$

Digit at ten's thousand's place =2× digit at ten's place

$$=2\times4 =8$$

∴ The five digit number formed =85041

Hence, the required five digit number is 85041

Section - D

13. a) My age is a multiple of 8 and 16 and it lies between 50 and 70 years. How old am I?

Multiples of 8- 8,16,24,32,40,48,56,64…..

Multiples of 16-48,64,80…

Common multiples of 8 and 16-48 and 64

b) In a class of 40 students, if every 4th student has participated in a drawing competition and every 6th student has participated in singing. How many students are participating in both the activities?

Every 4th student participated in drawing competition.

⇒ [40/4] = *10 students participated in drawing competition.*

these are the students numbered 4, 8, 12, 16, 20, 24, 28, 32, 36, 40

Every 6th student participated in singing.

⇒ [40/6] = *6 students participated in singing.*

these are the students numbered 6, 12, 18, 24, 30, 36

Therefore, the students who participated in both drawing competition and singing are the students numbered 12, 24, 36.

14. In the given figure, points A, B, C, D and E are collinear such that AB = BC = CD = DE.Then

(a) AD = AB + <u>BD</u>

(b) AD = AC + <u>CD</u>

(c) mid point of AE is <u>C</u>

(d) mid point of CE is <u>D</u>

(e) AE = <u>4</u> × AB.

15. A box contains 5 strips having 12 capsules of 500mg medicine in each capsule. Find the total weight in grams of medicine in 32 such boxes.

Step 1: Multiplying to find the total weight in one box

Number of strips in each box =5

Number of capsules in 1 strips =12

Weight of medicine in each capsule =500 mg

Therefore Weight of medicine in one box =5×12×500 mg

=30000 mg

Step 2: Dividing weight of medicine in 32 boxes in grams:

Weight of medicine in 32 such boxes =32×30000 mg

=960000 mg

Therefore Weight in grams =1000 g960000=960 g.   (As 1 g=1000 mg)

Hence, the weight of all the medicine in the box is 960 g.

16. Determine the sum of the four numbers as given below:

(a) successor of 32 -33

(b) predecessor of 49 -48

(c) predecessor of the predecessor of 56 -54

(d) successor of the successor of 67 -69

17. Name the following angles, using three letters:

(a) ∠1 -∠CBD

(b) ∠2-∠DBE

 (c) ∠3 -∠ABE

(d) ∠1 + ∠2 -∠CBD+∠DBE=∠CBE

(e) ∠2 + ∠3 -∠DBE+∠ABE=∠ABD

(f) ∠1 + ∠2 + ∠3 -∠CBD+∠DBE+∠ABE=∠ABC

(g) ∠CBA – ∠1-∠CBA –∠CBD=∠ABD

(h) ∠CBA – ∠3-∠CBA–∠ABE=∠CBE
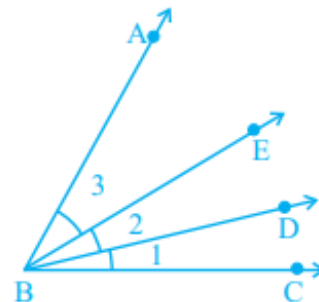
OR

Draw a circle with centre O and radius 4 cm. Draw a sector having the angle 72°.