

school Complex meeting - chillakur  
19/02/2024

8 marks questions

①. Prove that  $\sqrt{2} + \sqrt{3}$  is irrational.

(or)

Check whether,  $-150$  is a term of the AP:  $11, 8, 5, 2 \dots$

② If  $A = \{x : x \text{ is a natural number}\}$ ,  $B = \{x : x \text{ is an even natural number}\}$   
 $C = \{x : x \text{ is an odd natural number}\}$  and  $D = \{x : x \text{ is a prime number}\}$   
Find  $A \cap B$ ,  $A \cap C$ ,  $A \cap D$ ,  $B \cap C$ ,  $B \cap D$ ,  $C \cap D$ .

or

Find the roots of the equation  $5x^2 - 6x - 2 = 0$  by the method of completing the square.

③ The distribution below gives the weights of 30 students of a class. Find the median weight of the students.

| Weight (in kg)     | 40-45 | 45-50 | 50-55 | 55-60 | 60-65 | 65-70 | 70-75 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
| Number of students | 2     | 3     | 8     | 6     | 6     | 3     | 2     |

or

A toy is in the form of a cone mounted on a hemisphere. The diameter of the base and the height of the cone are 6 cm and 4 cm respectively. Determine the surface area of the toy. [use  $\pi = 3.14$ ]

④ 6. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting  
(i) a king of red colour                      (ii) a face card                      (iii) a red face card  
(iv) the jack of hearts                      (v) a spade                      (vi) the queen of diamonds

or

The angle of elevation of the top of a building from the foot of the tower is  $30^\circ$  and the angle of elevation of the top of the tower from the foot of the building is  $60^\circ$ . If the tower is 30 m high, find the height of the building.

⑤ Draw the graph of  $x^2 - 5x + 6$  and find zeroes?  
of

Construct an Isosceles triangle whose base is 8cm and altitude is 4 cm. Then, draw another triangle whose sides are  $1\frac{1}{2}$  times the corresponding sides of the isosceles triangle.