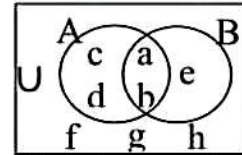




Attempt all the questions.

1. The sub-sets A and B of universal set U are presented in the Venn-diagram.



- a. List the elements of the universal set U. 1
- b. How many sub sets of 'B' can be formed? 1
- c. State whether set A and B are overlapping or disjoint and why? 1

2. If a shopkeeper gives a 15% discount on a table and sells it for Rs.850.

- a. Write the formula to find the discount amount if discount percent (D%) and marked price (M.P.) are given. 1
- b. Find the marked price of table. 2
- c. What is the discount amount given on the table if discount percent is reduced to 10%? 1

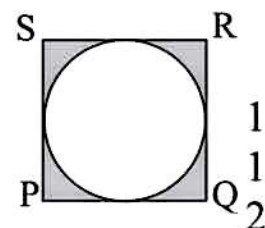
3. The simple interest on Rs.2160 for 4 years is Rs.648.

- a. What is the rate of interest? Write it. 1
- b. Find the rate of interest. 2
- c. At the same rate how much will be the interest on Rs.20,000 for 5 years? 2

4. a. Convert 0.00045 in scientific notation. 1

- b. If $x:y = 2:5$ and $y:z = 15:8$ then find $x:z$. 1
- c. If 15 workers can do a piece of work in 25 days. How many workers should be added to complete the same work in 15 days? 2
- d. The binary number is 1010_2 . If '1' is removed between two zero's, what will be the value of remaining binary in decimal system? 1

5. In the given figures PQRS is a square and a circle is drawn inside it.



- a. If one side of the square $PQ=14\text{cm}$, find its area. 1
- b. How much is the radius of circle? 1
- c. Find the area of the shaded portion. 2
- d. If length of the radius is doubled what will be the length of the side of a square? 1

6. a. Find the value of $(x+y)^0+(xy)^0$. 1

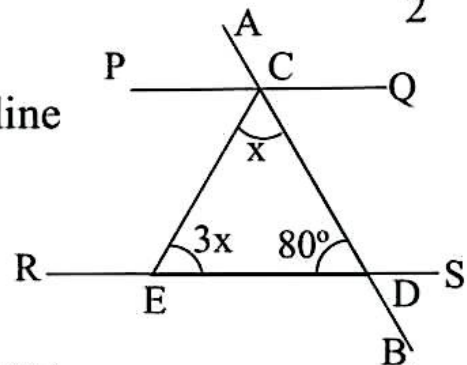
- b. Simplify: $\frac{x^2+y^2}{x-y} + \frac{2xy}{y-x}$ 2

7. a. Find the HCF of $x^2+5x+6,$ x^2+4x+3 2

- b. For what value of x, the value of $2x^2 - x - 6$ becomes zero? 2

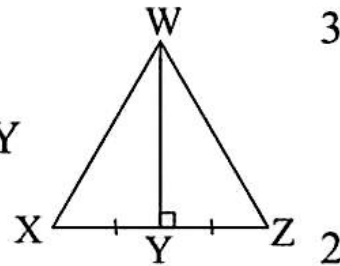
8. The sum of two numbers is 5 and the difference is 1.
- Make an equation by supposing x as the first number and y as the second number. 1
 - Solve the above equation by using graph. 2

9. In the adjoining figure AB intersect straight line PQ and RS at point C and D respectively.



- If $PQ \parallel RS$, write the alternate angle of $\angle PCE$. 1
 - From the adjoining figure, find the value of x . 2
 - At what value of $\angle QCD$, the line PQ and RS are parallel? 1
10. a. Construct a parallelogram ABCD in which $AB=4.5\text{cm}$, $AD=3\text{cm}$ and $\angle BAD=60^\circ$. 3

- b. In the given figure, Y is the mid point of XZ and $WY \perp XZ$, by which axioms are $\triangle WXY$ and $\triangle WYZ$ are congruent? If $WX=5\text{cm}$, what is the length of WZ?



- What type of polygon are used in regular tessellation? 1
- If the distance between the points $P(0, 6)$ and $Q(a, 0)$ is 6 units, find the value of 'a'. 2
- The vertices of $\triangle ABC$ are $A(2, 3)$ $B(4, 6)$ and $C(6, 3)$ plot the vertices of $\triangle ABC$ in graph paper and reflect it on x-axis. Show the image $\triangle A'B'C'$ in the same graph paper with their coordinates. 3

12. The monthly expenditure of a family is given below in the table:

Title of expenditure	Amount of expenditure in Rs.
Food	40,000
Education	20,000
Health	12,000

- Calculate the average expenditure of above data. 1
- Represent the above data in pie chart. 2