Chapter- 5

Introduction to Euclid's Geometry

WORKSHEET

1 Mark

(1) Euclid divided has famous treatise "The Elements" into

(a) 13 chapters (b) 12 chapters

(c) 11 chapters (d) 9 chapters

(2) The total number of propositions in the Element are

(a) 465 (b) 460 (c)13 (d) 55

(3) Greeks emphasized on

(a) Inductive reasoning (b) deductive reasoning

(c) both (a) & (b) (d) practical use of geometry

(4) In Ancient India, Alters with combination of shapes like rectangles, triangles and trapeziums were used for

(a) Public worship (b) household rituals

(c) both (a) & (b) (d) none of (a), (b) & (c)

(5) In ancient India, the shapes of altars used for household rituals were

(a) squares and circles

(b) triangles and rectangles

(c) trapeziums and pyramids

(d) rectangles and squares

2 Marks

(6) _________ are the axioms that are specific to geometry.

(7) ___________are statements which are proved through logical reasoning on the basis of previously proved results and axioms.

(8) Things which are equal to the same things are __________to one another.

(9) There are given five distinct points and no three of them are collinear. What is the number of lines that can be drawn through them?

(10) How many lines can be drawn through a given point?

3 Marks

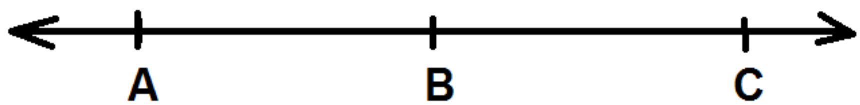
(11) Ram and Ravi have the same weight. If they each gain weight by 2 kg, how will their new weights be compared?

(12) Solve the equation a– 15 =25 and state which axiom do you use here.

(13) It is known that x + y =10 and that x = z. Show that z + y = 10.

(14) Two salesman make equal sales during the month of August. In September, each salesman doubles his sale of the month of August. Compare their sales in September.

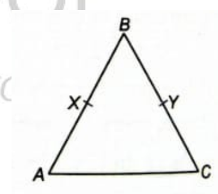
(15) If A,B and C are three points on a line, and B lies between A and C (Figure), then prove that, AB + BC = AC



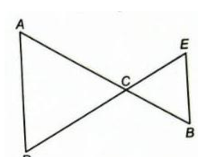
4 Marks

(16) In the figure, we have X and Y as the mid –points of AC and BC and AX=CY. Show that AC = BC.

(17) In the figure, BX = $\frac{1}{2}$AB; BY = $\frac{1}{2}$BC and AB= BC. Show that BX=BY.



(18) Prove that an equilateral triangle can be constructed on any given line segment.



(19) In figure, we have AC = DC, CB=CE. Show that AB=DE.

(20) In figure, if ∠1=∠3, ∠2=∠4 and ∠3=∠4, write the relation between ∠1 and ∠2 using a Euclid's axiom.