1. There may be chance of error due to improper viewing.
2. It is better to use a divider than a ruler, because the thickness of the ruler may cause difficulties in reading off her length. However divider gives up accurate measurement.
3. Yes.

A   C   B
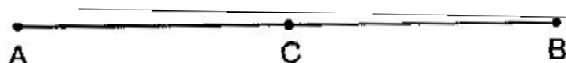
AB = 6.5 cm, AC = 3cm, CB = 3.5 cm
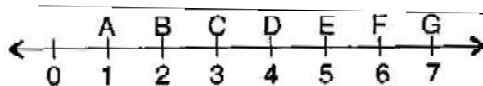AC + CB = 3 cm + 3.5 cm = 6.5 cm = AB

4. $\overline{AC}$ is the longest line segment, thus B is the point between A and C.
5. AD = 3 units, DG = 3 units
   AD = DG.
   Thus, D is the mid-point.

6. B is the mid-point of $\overline{AC}$.
   ∴   AB = BC   ....(i)
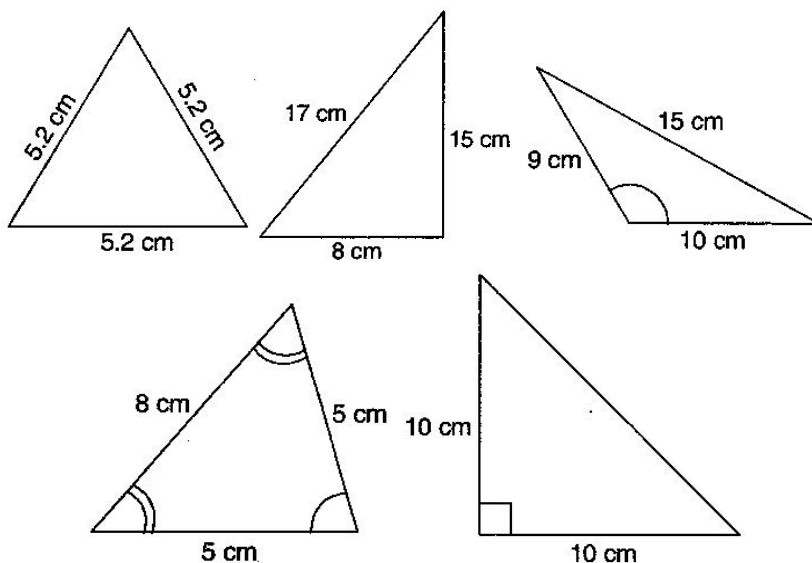   And C is the mid-point of $\overline{BD}$.
   ∴   BC = CD   ....(ii)
   From eq. (i) and (ii),
            AB = CD

7. Yes, sum of two sides of a triangle is always greater than the third side.

1. (a) $\frac{1}{2}$ or two right angles

    (b) $\frac{1}{4}$ or one right angle

    (c) $\frac{1}{4}$ or one right angle

    (d) $\frac{3}{4}$ or three right angles.

    (e) $\frac{3}{4}$ or three right angles.

    (f) $\frac{3}{4}$ or three right angles.

2. (a) At 6   (b) At 8   (c) At 8   (d) At 2

3. (a) West   (b) West   (c) North   (d) South
    (For answer (d), it is immaterial whether we turn clockwise or anticlockwise, because one full revolution will bring us back to the original position)

4. (a) $\frac{3}{4}$ (b) $\frac{3}{4}$ (c) $\frac{1}{2}$

5. (a) One right angle   (b) Two right angles
    (c) Two right angles   (d) One right angle
    (e) Three right angles   (f) Two right angles

6. (a) One right angle   (b) Three right angles
    (c) Four right angles   (d) Two right angles

7. (a) At 9   (b) At 2   (c) At 7   (d) At 7
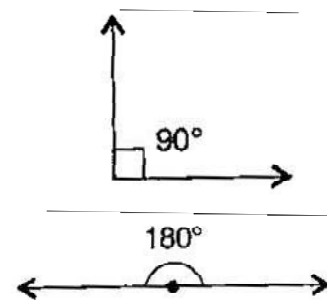
1. (i) → (c)
    (ii) → (d)
    (iii) → (a)
    (iv) → (e)
    (v) → (b)

2. (a) Acute angle
    (b) Obtuse angle
    (c) Right angle
    (d) Reflex angle
    (e) Straight angle
    (f) Acute angle

1. (i)   90°

    (ii)   180°

2. (a) True   (b) False   (c) True   (d) True   (e) True

3. (a) 35°, 20°   (b) 110°,135°

4. (a) 40°   (b) 130°   (c) 90°   (d) 60°

5. ∠B has larger measure.
    ∠A = 40°   and   ∠B = 65°

6. Second angle has larger measure.

7. (a) acute angle   (b) obtuse angle
    (c) straight angle   (d) acute angle
    (e) obtuse angle

8. (i) 30°   (ii) 120°   (iii) 60°   (iv) 150°

9. (i) 90° (Right angle)   (ii) 30° (Acute angle)   (iii) 180° (Straight angle)
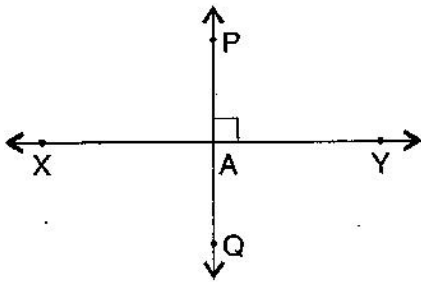
10. No, the measure of angle will be same.

11. Sol.

Angle	∠AOB	∠AOC	∠BOC	∠DOC	∠DOA	∠DOB
Measure	40°	130°	90°	90°	140°	180°
Type	Acute	Obtuse	Right	Right	Obtuse	Striaght

1. (a) Perpendicular
   (b) Not perpendicular
   (c) Perpendicular
   (d) Not perpendicular

2. Sol.

   $\angle$ PAY = $90°$

3. One set-square has $45°, 90°, 45°$ and other set-square has $60°, 90°, 30°$. They have $90°$ as common angle.

4. (a) Yes, both measure 2 units.
   (b) Yes, because CE = EG
   (c) $\overline{DF}$ and $\overline{CG}$, $\overline{BH}$
   (d) (i) True, (ii) True, (iii) True

1. (a) Scalene triangle   (b) Scalene triangle
    (c) Equilateral triangle   (d) Right-angled triangle
    (e) Isosceles right-angled triangle   (f) Acute-angled triangle

2. (i) → (e), (ii) → (g), (iii) → (a), (iv) → (f), (v) → (d), (vi) → (c), (vii) → (b)
3. (a) Acute angled triangle and Isosceles triangle
    (b) Right-angled triangle and Scalene triangle
    (c) Obtuse-angled triangle and Isosceles triangle
    (d) Right-angled triangle and Isosceles triangle
    (e) Equilateral triangle and acute angled triangle
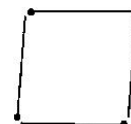   (f) Obtuse-angled triangle and scalene triangle

4. (a) 3 matchsticks
    This is an acute angle triangle and it is possible with 3 matchsticks to make a triangle because sum of two sides is greater than third side.
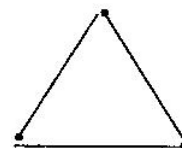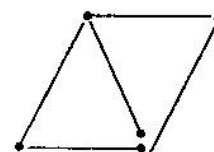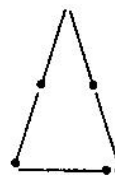
    (b) 4 matchsticks
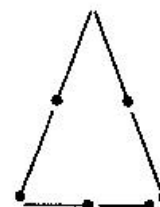   This is a square, hence with four matchsticks we cannot make triangle.

    (c) 5 matchsticks
    This is an acute angle triangle and it is possible to make triangle with five matchsticks, in this case sum of two sides is greater than third side.

    (d) 6 matchsticks
    This is an acute angle triangle and it is possible to make a triangle with the help of 6 matchsticks because sum of two sides is greater than third side.

1. (a) True   (b) True
   (c) True   (d) True
   (e) False   (f) False

2. (a) Because its all angles are right angle and opposite sides are equal.
   (b) Because its opposite sides are equal and parallel.
   (c) Because its four sides are equal and diagonals are perpendicular to each other.
   (d) Because all of them have four sides.
   (e) Because its opposite sides are equal and parallel.

3. A square is a regular quadrilateral.

1. (a) As it is not a closed figure, therefore, it is not a polygon.
    (b) It is a polygon because it is closed by line segments.
    (c) It is not a polygon because it is not made by line segments.
    (d) It is not a polygon because it not made only by line segments, it has curved surface also.

2. (a) Quadrilateral   (b) Triangle
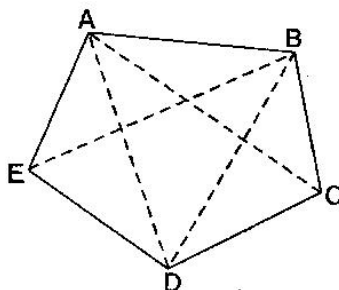   (c) Pentagon   (d) Octagon

3. ABCDEF is a regular hexagon and triangle thus formed by joining AEF is an isosceles triangle.
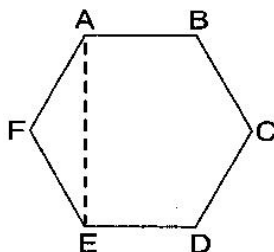
4. ABCDEFGH is a regular octagon and CDGH is a rectangle.
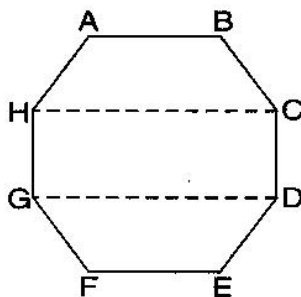
5. ABCDE is the required pentagon and its diagonals are AD, AC, BE and BD.

1. Sol.

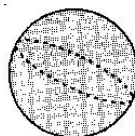   (a) Cone   (ii)

    (b) Sphere   (iv)
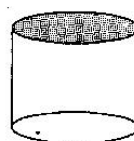
    (c) Cylinder   (v)

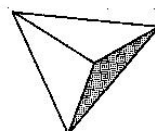   (d) Cuboid   (iii)

    (e) Pyramid   (i)

2. (a) Cuboid
    (b) Cuboid
    (c) Cuboid
    (d) Cylinder
    (e) Sphere