Constructions

2 Marks:
1. Draw a line segment $AB$ of length 7 cm. Using ruler and compasses, find a point $P$ on $AB$ such that \[ \frac{AP}{AB} = \frac{3}{5}. \]
   CBSE 2011, Outside Delhi (30/1)

2. Draw a line segment of length 6 cm. Using compasses and ruler, find a point $P$ on it which divides it in the ratio 3 : 4.
   CBSE 2011, Delhi (30/1/1)

3 Marks:
1. Draw a triangle $ABC$ in which $AB = 5$ cm, $BC = 6$ cm and angle $ABC = 60^\circ$. Construct a triangle whose sides are $\frac{5}{7}$ times the corresponding sides of triangle $ABC$.
   CBSE Sample Paper II 2016

2. Construct a $\triangle ABC$ in which $AB = 6$ cm, $\angle A = 30^\circ$ and $\angle B = 60^\circ$. Construct another $\triangle AB'C'$ similar to $\triangle ABC$ with $AB' = 8$ cm.
   CBSE 2015, Outside Delhi (30/1)

3. Construct a triangle with sides 5 cm, 5.5 cm and 6.5 cm. Now construct another triangle, whose sides are $\frac{3}{5}$ times the corresponding sides of the given triangle.
   CBSE 2014, Outside Delhi (30/1), (30/3)

4. Draw a line segment $AB$ of length 8 cm. Taking $A$ as centre, draw a circle of radius 4 cm and taking $B$ as centre, draw another circle of radius 3 cm. Construct to each circle from the centre of the other circle.
   CBSE 2014, Outside Delhi (30/2)

5. Construct a triangle with sides 5 cm, 4 cm and 6 cm. Then construct another triangle whose sides are $\frac{2}{3}$ times the corresponding sides of first triangle.
   CBSE 2013, Delhi (30/1/1)

6. Draw a triangle $ABC$ with $BC = 7$ cm, $\angle B = 45^\circ$ and $\angle C = 60^\circ$. Then construct another triangle, whose sides are $\frac{3}{5}$ times the corresponding sides of $\triangle ABC$.
   CBSE 2012, Outside Delhi (30/1)

7. Construct a right triangle in which the sides, (other than the hypotenuse) are of length 6 cm and 8 cm. Then construct another triangle, whose sides are $\frac{2}{5}$ times the corresponding sides of the given triangle.
   CBSE 2012, Delhi (30/1/1)

8. Draw a right triangle in which the sides (other than the hypotenuse) are of lengths 6 cm and 8 cm. Then construct another triangle whose sides are $\frac{3}{5}$ times the corresponding sides of the given triangle.
   CBSE 2012, Foreign (30/2/1)

9. Draw a triangle $ABC$ in which $AB = 5$ cm, $BC = 6$ cm and $\angle ABC = 60^\circ$. Then construct a triangle whose sides are $\frac{5}{7}$ times the corresponding sides of $\triangle ABC$.
   CBSE 2011, Delhi (30/1/1)

10. Draw a pair of tangents to a circle of radius 3 cm, which are inclined to each other at an angle of 60°.
    CBSE 2011, Outside Delhi (30/1)

11. Draw a right triangle in which the sides (other than hypotenuse) are of lengths 4 cm and 3 cm. Then construct triangle whose sides are $\frac{2}{5}$ times the corresponding sides of the given triangle.
    CBSE 2011, Outside Delhi (30/1)

12. Draw a line segment $AB$ of length 7 cm. Taking $A$ as centre, draw a circle of radius 3 cm and taking $B$ as centre, draw another circle of radius 2 cm. Construct tangents to each circle from the centre of the other circle.
    CBSE 2011, Foreign (30/2/1)

13. Construct an isosceles triangle whose base is 8 cm and altitude 4 cm and then construct another triangle whose sides are $\frac{3}{4}$ times the corresponding sides of the isosceles triangle.
    CBSE 2011, Foreign (30/2/1)

14. Construct a triangle $ABC$ is which $BC = 8$ cm, $\angle B = 45^\circ$ and $\angle C = 30^\circ$.
    Construct another triangle similar to $\triangle ABC$ such that its sides are $\frac{2}{4}$ of the corresponding sides of $\triangle ABC$.
    CBSE 2010, Delhi (30/1/1)

15. Draw a circle of radius 3 cm. From a point $P$, 7 cm away from the centre of the circle, draw two tangents to the circle. Also, measure the lengths of the tangents.
    CBSE 2010, Foreign (30/2/1)
16. Draw a right triangle in which sides (other than hypotenuse) are of lengths 8 cm and 6 cm. Then construct another triangle whose sides are $\frac{3}{4}$ times the corresponding sides of the first triangle. **CBSE 2009, Outside Delhi (30/1)**

17. Construct a $\triangle ABC$ in which $BC = 6.5 \text{ cm}, AB = 4.5 \text{ cm}$ and $\angle ABC = 60^\circ$. Construct a triangle similar to this triangle whose sides are $\frac{3}{4}$ of the corresponding sides of the triangle $ABC$. **CBSE 2009, Delhi (30/1/1)**

18. Draw a circle of radius 3 cm. From a point $P$, 6 cm away from its centre, construct a pair of tangents to the circle. Measure the lengths of the tangents. **CBSE 2009, Foreign (30/2/1)**

19. Draw a right triangle in which the sides containing the right angle are 5 cm and 4 cm. Construct a similar triangle whose sides are $\frac{5}{3}$ times the sides of the above triangle. **CBSE 2008, Foreign (30/2/1), (30/2/2), (30/2/3)**

20. Construct a $\triangle ABC$ in which $CA = 6 \text{ cm}, AB = 5 \text{ cm}$ and $\angle BAC = 45^\circ$, then construct a $\triangle ABC$. **CBSE Sample Paper I 2008**

21. Construct a triangle similar to given $\triangle ABC$ in which $AB = 4 \text{ cm}, BC = 6 \text{ cm}$ and $\angle ABC = 60^\circ$, such that each side of the new triangle is $\frac{3}{4}$ of given $\triangle ABC$. **CBSE Sample Paper II 2008**

22. Construct a circle whose radius is equal to 4 cm. Let $P$ be a point whose distance from its centre is 6 cm. Construct two tangents to it from $P$. **CBSE Sample Paper III 2008**

### 4 Marks:

1. Construct a triangle $ABC$ with side $BC = 7 \text{ cm}, \angle B = 45^\circ, \angle A = 105^\circ$. Then construct another triangle whose sides are $\frac{2}{3}$ times the corresponding sides of the $\triangle ABC$. **CBSE 2017, Outside Delhi (30/1)**

2. Construct an isosceles triangle with base 8 cm and altitude 4 cm. Construct another triangle whose sides are $\frac{2}{3}$ times the corresponding sides of the isosceles triangle. **CBSE 2017, Delhi (30/1/1)**

3. Draw two concentric circles of radii 3 cm and 5 cm. Taking a point on the outer circle, construct the pair of tangents to the inner circle. **CBSE 2017, Foreign (30/2/1)**

4. Draw a $\triangle ABC$ with sides $BC = 5 \text{ cm}, AB = 6 \text{ cm}$ and $AC = 7 \text{ cm}$ and then construct a triangle similar to $\triangle ABC$ whose sides are $\frac{4}{7}$ of the corresponding sides of $\triangle ABC$. **CBSE Sample Paper 2017**

5. Draw a circle of radius 4 cm. Draw two tangents to the circle inclined at an angle of 60$^\circ$ to each other. **CBSE 2016, Outside Delhi (30/1)**

6. Draw two concentric circles of radii 3 cm and 5 cm. Construct a tangent to smaller circle from a point on the larger circle. Also measure its length. **CBSE 2016, Delhi (30/1/1)**

7. Draw a $\triangle ABC$ in which $AB = 4 \text{ cm}, BC = 5 \text{ cm}$ and $AC = 6 \text{ cm}$. Then construct another triangle whose sides are $\frac{3}{4}$ of the corresponding sides of $\triangle ABC$. **CBSE 2016, Foreign (30/2/1)**

8. Draw a pair of tangents inclined to each other at an angle of 60$^\circ$ to a circle of radius 3 cm. **CBSE Sample Paper II 2016**

9. Construct a triangle $ABC$ with $BC = 7 \text{ cm}, \angle B = 60^\circ$ and $AB = 6 \text{ cm}$. Construct another triangle whose sides are $\frac{3}{4}$ times the corresponding sides of $\triangle ABC$. **CBSE 2015, Delhi (30/1/1)**

10. Draw a circle of radius 3 cm. From a point $P$, 7 cm away from its centre draw two tangents to the circle. Measure the length of each tangent. **CBSE 2015, Foreign (30/2/1)**

11. Draw a triangle $ABC$ in which $AB = 5 \text{ cm}, BC = 6 \text{ cm}$ and $\angle ABC = 60^\circ$. Construct another triangle similar to $\triangle ABC$ with scale factor $\frac{5}{7}$. **CBSE 2015, Sample**