CBSE NCERT Based Chapter wise Questions (2025-2026)

Class-X

Subject: MATHEMATICS

Chapter Name : Triangles (Chap : 6)

Total : 8 Marks (expected) [MCQ(1)-1 Mark, SA-I(1)-2, LA(1)-5]

Level - 1

MCQ Type :

1. In ABC, AC = 15 cm and DE ||BC. If AB/AD = 3, then EC =

Ⓐ 5 cm Ⓑ 10 cm Ⓒ 2.5 cm Ⓓ 9 cm

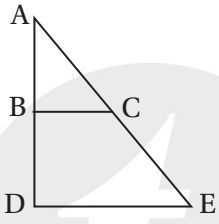
Hint : use Basic Proportionality Theorem (Thales Theorem)

2. In ΔABC and ΔDEF, ∠A = ∠ E = 40° and AB/ED = AC/EF. If ∠F is 65°, then ∠B =

Ⓐ 85° Ⓑ 75° Ⓒ 35° Ⓓ 65°

Hint : ΔABC ~ ΔEDF

3. The triangles ABC and ADE are similar, which of the following is true?



Ⓐ EC/AC = AD/DE Ⓑ BC/BD = CE/DE Ⓒ AB/AD = BC/DE Ⓓ All of the above

Hint : use S-S-S property of similarity.

4. If in ΔCAB and ΔFED, AB/EF = BC/FD = AC/ED, then :

Ⓐ ΔABC ~ ΔDEF Ⓑ ΔCAB ~ ΔDEF Ⓒ ΔABC ~ ΔEFD Ⓓ ΔCAB ~ ΔEFD

Hint : use similarity concept of triangles.

5. ΔABC is such that AB = 3 cm, BC = 2 cm and CA = 2.5 cm. If ΔDEF ~ ΔABC and FE = 4 cm, then find the perimeter of ΔDEF.

Ⓐ 14 cm Ⓑ 15 cm Ⓒ 12 cm Ⓓ 10 cm

Hint : Use S-S-S property of similarity.

6. ΔABC, D and E are the points on the sides AB and AC respectively such that DE||BC . If AD = 6x – 7, DB = 4x – 3, AE = 3x – 3, and EC = 2x – 1 then find the value of 'x'.

Ⓐ 2 Ⓑ 3 Ⓒ 1 Ⓓ 4

Hint : Use Basic Proportionality Theorem (Thales Theorem)

SA-I Type

7. ABCD is a trapezium, in which AB is parallel to DC and its diagonals intersect each other at point O.

Show that $\frac{AO}{BO} = \frac{CO}{DO}$

Hint : ΔAOB ~ ΔCOD (A – A)

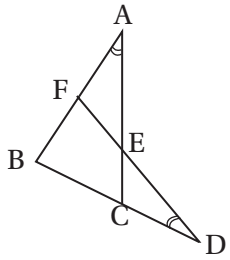
8. In ABC, X is the middle point of AB. If XY||BC, then prove that Y is the middle point of AC.

Hint : Use Basic Proportionality Theorem

9. The diagonals of a quadrilateral ABCD intersect each other at the point O, such that $\frac{AO}{BO} = \frac{CO}{DO}$. Show that ABCD is a trapezium.

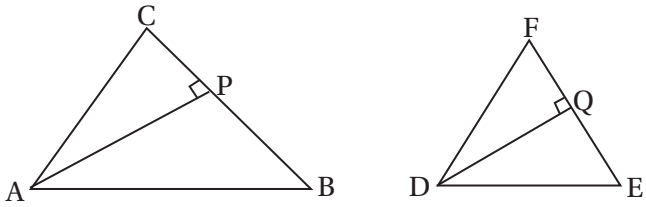
Hint : $\Delta AOB \sim \Delta COD$ (S – A – S)

10. In the figure, if $\angle A = \angle D$, then prove that AE × DC = DE × AF.



Hint : $\Delta AFE \sim \Delta DCE$ (A – A)

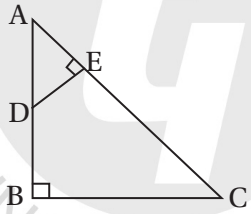
11. In the given figure, $\Delta ABC \sim \Delta DEF$, AP bisects $\angle CAB$ and DQ bisects $\angle FDE$.



Prove that : $\frac{AP}{DQ} = \frac{AB}{DE}$

Hint : $\Delta ABP \sim \Delta DEQ$ (A – A)

12. In the givenfigure, AB ⊥ BC and DE ⊥ AC. Prove that $\Delta ABC \sim \Delta AED$.



Hint : $\angle DAE = \angle CAB$, $\angle AED = \angle ABC$

LA Type :

13. If $\Delta ABC \sim \Delta DEF$ and AX, DY are respectively the medians of ΔABC and ΔDEF. Then prove that

(i) $\Delta ABX \sim \Delta DEY$ (ii) $\Delta ACX \sim \Delta DFY$ (iii) $\frac{AX}{DY} = \frac{BC}{EF}$

Hint : NCERT Page No. 97 Q. 16

14. State and prove Basic Proportionality Theorem (Thales Theorem).

Hint : NCERT Page No. 80 Theorem 6.1

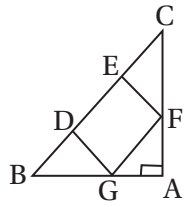
15. CD and GH are respectively the bisectors of $\angle ACB$ and $\angle EGF$ such that D and H lie on sides AB and FE of ΔABC and ΔEFG respectively.

If $\Delta ABC \sim \Delta FEG$, show that

(i) $\frac{CD}{GH} = \frac{AC}{FG}$ (ii) $\Delta DCB \sim \Delta HGE$ (iii) $\Delta DCA \sim \Delta HGF$

Hint : NCERT Page No. 96 Q.10

16. In figure, DEFG is a square and BAC = 90°, show that $DE^2 = BD \times EC$.

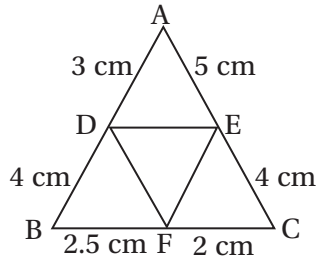


Hint : $\Delta BDG \sim \Delta FEC$ (A – A)

17. If sides AB, BC and median AD of ΔABC are proportional to the corresponding sides PQ, QR and median PM of ΔPQR, show that $\Delta ABC \sim \Delta PQR$.

Hint : NCERT Page No. 97 Q.12

18. In the given figure, AD = 3 cm, AE = 5 cm, BD = 4 cm, CE = 4 cm, CF = 2 cm, BF = 2.5 cm, then find the pair of parallel lines and hence their lengths.



Hint : $\frac{EC}{EA} = \frac{CF}{FB}$

EF || AB ... [Converse of Thales' theorem]

$\frac{CE}{CA} = \frac{CF}{CB}$

$\angle ECF = \angle ACB$

$\Delta CFE \sim \Delta CBA$

ANSWER

1. Ⓑ
2. Ⓑ
3. Ⓒ
4. Ⓒ
5. Ⓑ
6. Ⓐ
18. EF = $\frac{28}{9}$ cm and AB