

Congruence & Similarity

1. $\triangle XYZ \sim \triangle LMN$, with $\text{ar}(\triangle XYZ) = 36 \text{ cm}^2$ and $\text{ar}(\triangle LMN) = 64 \text{ cm}^2$. If $XY = 18 \text{ cm}$, then find the length of LM .

- A) 20 cm B) 22 cm
C) 24 cm D) 26 cm

2. Two triangles, $\triangle ABC$ and $\triangle XYZ$, are congruent under the ASA criterion. If $\angle ABC = 55^\circ$, $\angle BCA = 65^\circ$, and $\angle XYZ = 55^\circ$, find the value of $\angle YZX$.

- A) 50° B) 60° C) 65° D) 70°

3. In $\triangle ABC \sim \triangle PQR$, the sides of $\triangle ABC$ are 6 cm, 8 cm, and 10 cm. Find the longest side of $\triangle PQR$.

- A) 16 cm B) 18 cm
C) 20 cm D) 22 cm

4. In $\triangle XYZ \sim \triangle ABC$, the sides of $\triangle XYZ$ are 10 cm, 12 cm, and 15 cm. Find the longest side of $\triangle ABC$.

- A) 12 cm B) 14 cm
C) 15 cm D) 16 cm

5. In $\triangle XYZ \sim \triangle MNO$, the corresponding sides are proportional. Find the length of YZ , if $NO = 30 \text{ cm}$.

- A) 14 cm B) 15 cm
C) 16 cm D) 17 cm

6. If $\triangle PQR \sim \triangle STU$, such that $PQ = 8 \text{ cm}$, $ST = 10 \text{ cm}$, and $RU = 12 \text{ cm}$, find the length of PR .

- A) 9 cm B) 10 cm
C) 12 cm D) 11 cm

7. If $\triangle XYZ \sim \triangle MNO$, and the ratio of their areas is $\frac{1}{4}$, find the length of XY if $MN = 16$ cm.

- A) 13.5 cm B) 14 cm
C) 15.5 cm D) 16 cm

8. If $\triangle PQR \sim \triangle STU$, and the ratio of their areas is $\frac{1}{9}$, find the length of PQ if $ST = 12$ cm.

- A) 12 cm B) 15 cm
C) 18 cm D) 20 cm

9. If $\triangle PQR \sim \triangle XYZ$, such that $PQ = 8$ cm and $XY = 16$ cm, find the ratio of their areas.

- A) 16 cm B) 15 cm
C) 18 cm D) 20 cm

10. The areas of two similar triangles are 400 cm² and 225 cm². Find the ratio of their corresponding sides.

- A) $\frac{20}{18}$ B) $\frac{18}{19}$
C) $\frac{19}{18}$ D) $\frac{18}{20}$

11. If $\triangle ABC \sim \triangle DEF$, such that $AB = 12$ cm, $EF = 8$ cm, find the length of AC if $DF = 10$ cm.

- A) 9 cm B) 12 cm
C) 10 cm D) 16 cm

12. $\triangle XYZ \sim \triangle PQR$ such that $XY = 7.2$ cm and $PQ = 9$ cm, find the length of YZ if $QR = 10$ cm.

- A) 50 cm B) 52 cm
C) 54 cm D) 48 cm

13. $\triangle ABC \sim \triangle DEF$ such that $BC = 10$ cm and $EF = 15$ cm, find the length of AB if $DE = 20$ cm.

- A) 40 cm B) 45 cm
C) 50 cm D) 35 cm

14. In $\triangle XYZ$, points M and N are on XY and YZ, respectively, such that $MN \parallel XZ$. If $YM = 12$ cm and $YN = 10$ cm, find the length of XM.

- A) 18 cm B) 10.5 cm
C) 16 cm D) 12 cm

15. In $\triangle PQR$, points M and N lie on PQ and PR, respectively, such that $MN \parallel QR$. If $PM = 10$ cm and $PN = 12.33$ cm, find the length of PM.

- A) 10 cm B) 12.33 cm
C) 16.67 cm D) 14.95 cm

16. $\triangle PQR$ and $\triangle XYZ$ are similar triangles. The areas of $\triangle PQR$ and $\triangle XYZ$ are 9.6 cm² and 10.2 cm², respectively. Find the ratio of their corresponding sides.

- A) 9.6 cm B) 10.2 cm
C) 10.8 cm D) 11.4 cm

17. If the ratio of the corresponding sides of two similar triangles is 4 : 5, then what is the ratio of their areas?

- A) 16 : 25 B) 4 : 5
C) 8 : 10 D) 20 : 25

18. In $\triangle PQR$, ST is a line parallel to QR, dividing the triangle into two parts. If the area of $\triangle PST$ is 4 cm², find the length of PT.

- A) 4 cm B) 5 cm
C) 6 cm D) 7 cm

Key

1-C, 2-B, 3-A, 4-C, 5-B, 6-B, 7-A, 8-A, 9-A, 10-A, 11-D, 12-C, 13-C, 14-A, 15-C, 16-A, 17-A, 18-D.