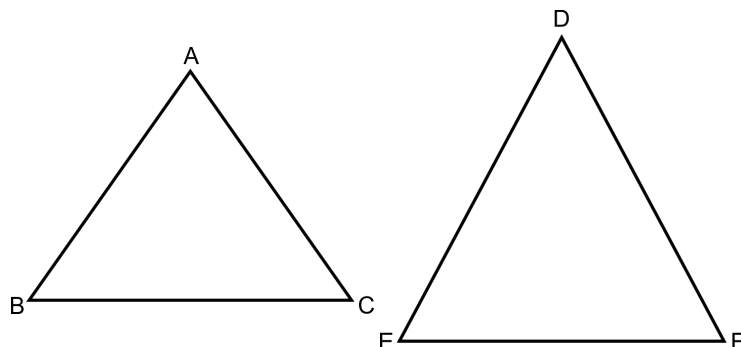


**Chapter: 1**

**Q.1 Choose the correct alternatives.**

**(3)**

1)



$\triangle ABC$  and  $\triangle DEF$  are equilateral triangles,  $A(\triangle ABC) : A(\triangle DEF) = 1 : 2$ . If  $AB = 4$  then what is length of  $DE$ ?

- a.  $2\sqrt{2}$       b. 4      c. 8      d.  $4\sqrt{2}$

2)  $\triangle ABC$  and  $\triangle XYZ$  are equilateral triangles.

$A(\triangle ABC) : A(\triangle XYZ) = 25 : 36$ . Find  $\left(\frac{AC}{XZ}\right)^2$

- a.  $\frac{5}{6}$       b.  $\frac{6}{5}$       c.  $\frac{25}{36}$       d.  $\frac{36}{25}$

3)

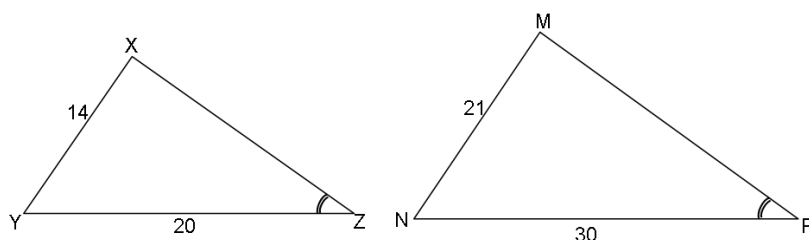
If  $\triangle PQR \sim \triangle ABC$ ,  $PQ = 6\text{cm}$ ,  $AB = 8\text{cm}$  and perimeter of  $\triangle ABC$  is 36 cm, then perimeter of  $\triangle PQR$  is

- a. 20.25 cm      b. 27 cm      c. 48 cm      d. 64 cm

**Q.2 Solve the following question. (Any Two)**

**(4)**

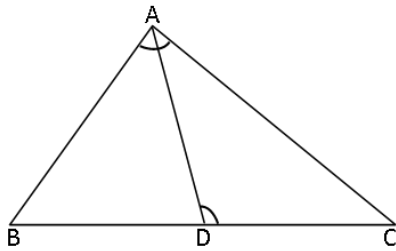
1) Can we say that the two triangles in figure similar, according to information given? If yes, by which test?



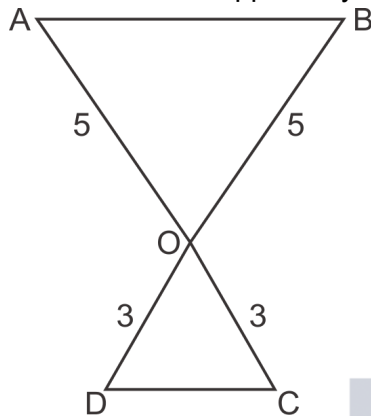
2)

In the figure, in  $\triangle ABC$ , point D on side BC is such that,  $\angle BAC = \angle ADC$ .

Prove that,  $CA^2 = CB \times CD$



3) In the following figure, indicate whether the triangle are similar or not. Give reason in support of your answer.



**Q.3 Solve the following question. (Any Two)**

**(6)**

1) Prove that : The bisector of an angle of a triangle divides the side opposite to the angle in the ratio of the remaining sides.

2)

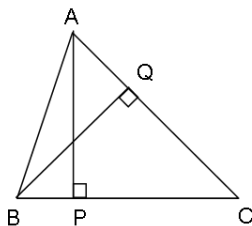
In a  $\triangle ABC$ , D and E are points on the sides AB and AC respectively such that AD = 5.7cm,

BD = 9.5cm, AE = 3.3cm, and AC = 8.8cm. Is  $DE \parallel BC$ ? Justify your answer.

3)

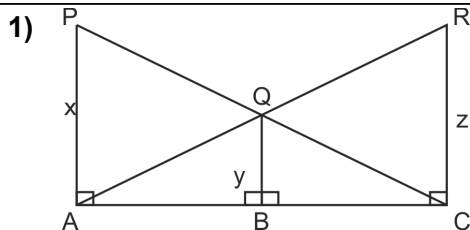
In  $\triangle ABC$ ,  $AP \perp BC$ ,  $BQ \perp AC$ , B-P-C, A-Q-C then prove that,  $\triangle CPA \sim \triangle CQB$ . If AP = 7,

BQ=8, BC=12 then find AC.



**Q.4 Solve the following question. (Any One)**

**(4)**

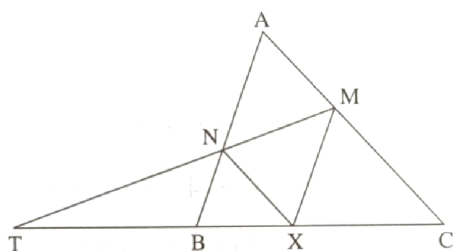


In the above figure, seg PA, seg QB and seg RC are perpendicular to seg AC. From the information given in the figure, prove that :  $\frac{1}{x} + \frac{1}{z} = \frac{1}{y}$

2)

In  $\triangle ABC$ , point X is any point on side BC. Seg XM  $\parallel$  seg AB and seg XN  $\parallel$  seg AC. Extend seg MN such that it intersects extended side CB in point T.

Then prove that  $TX^2 = TB \times TC$ .



**Q.5 Solve the following question. (Any One)**

**(3)**

- 1) An architecture has model of building. Length of building is 1 m then length of model is 0.75 cm then find length and height of model building whose actual length is 22.5 m and height is 10 m.

2)

$\triangle ABC$ , PQ is a line segment intersecting AB at P and AC at Q such that seg PQ  $\parallel$  seg BC. If

PQ divides  $\triangle ABC$  into two equal parts having equal areas, find  $\frac{BP}{AB}$ .