INDIAN SCHOOL AL WADI AL KABIR

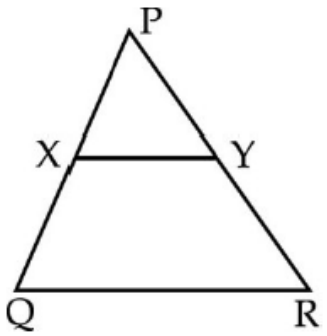
Class X, Mathematics ***Worksheet- Triangles***

09-08-20

OBJECTIVE TYPE (1 Mark)

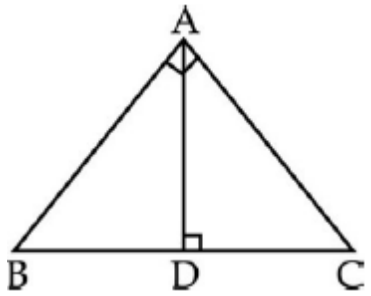
Q.1. In the given figure, XY ll QR, $\frac{PQ}{XQ} = \frac{7}{3}$

and PR = 6.3 cm then YR equals :



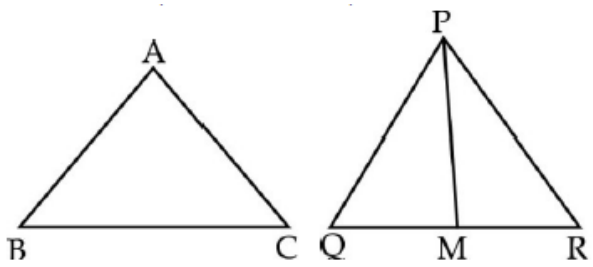
A	2.7 cm	**B**	18.9 cm	**C**	2.1 cm	**D**	0.9 cm

Q.2. In the given figure, ∠BAC = 90°and AD ⊥ BC, then



A	BD X CD = BC^2	**B**	AB X AC = BC^2	**C**	BD X CD = AD^2	**D**	AB X AC = AD^2

Q.3.

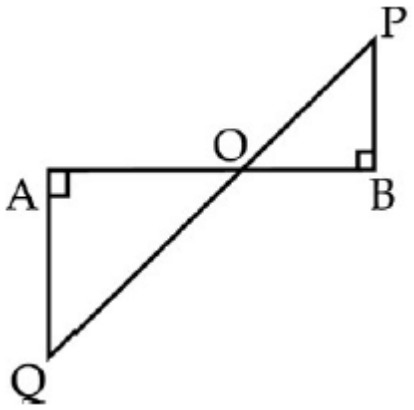
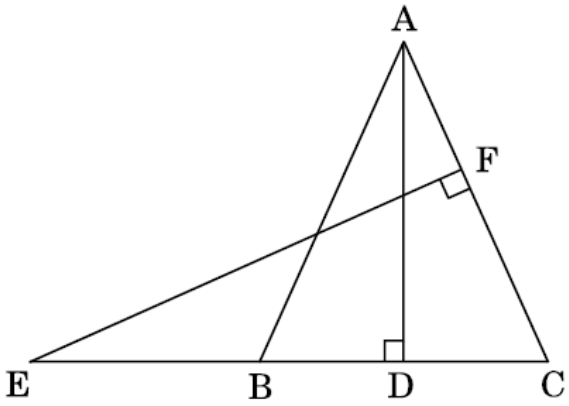
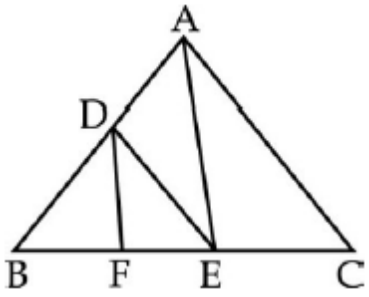


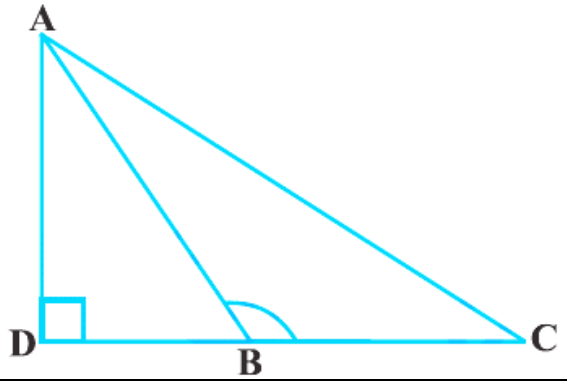
In the given figure, ΔABC ~ ΔPQR, PM is median of ΔPQR. If ar(ΔABC) = 289 cm^2, BC = 17 cm, MR= 6.5 cm, then the area of ΔPQM is :

A	169 cm^2	**B**	13 cm^2	**C**	84.5 cm^2	**D**	144.5 cm^2

Q.4. In triangles PQR and MST, ∠P =55°, ∠Q =25°, ∠M =100° and ∠S =25°, then

A	Δ TSM ~ΔPQR	**B**	Δ QPR ~ΔSTM	**C**	Δ QPR~ΔMST	**D**	ΔTSM≅ ΔPQR

Fill in the blanks(1mark)		
Q5.	The area of two similar triangles are 25 sq. cm and 121 sq. cm. The ratio of their corresponding sides is …….	
Q6.	In the given figure, QA $\perp$ AB and PB $\perp$ AB. If AO = 20 cm, BO = 12 cm, PB = 18 cm, then AQ is ……..	
SECTION B (2 marks)		
Q7.	DE is drawn parallel to base BC of Δ ABC, meeting AB in D and AC at E. If $\frac{AB}{BD}$ = 4 and CE = 2 cm, find the length of AE	
Q8.	In Figure, E is a point on CB produced of an isosceles Δ ABC, with side AB = AC. If AD $\perp$ BC and EF $\perp$ AC, prove that Δ ABD $\sim$ Δ ECF.	
Q9.		In the given figure DE ll AC, and DF ll AE, prove that $\frac{FE}{BF}=\frac{EC}{BE}$

SECTION C (3 marks)	
Q10	D, E and F are respectively the mid-points of sides AB, BC and CA of Δ ABC. Find the ratio of the areas of Δ DEF and Δ ABC.
Q11	Prove that the area of an equilateral triangle described on one side of a square is equal to half the area of the equilateral triangle described on one of its diagonals.
Q12	The perpendicular from A on side BC of a Δ ABC meets BC at D such that DB = 3CD. Prove that $2AB^2 = 2AC^2 + BC^2$.
Q13	AD and PM are medians of triangles ABC and PQR respectively where Δ ABC ~ ΔPQR. Prove that $\frac{AB}{PQ} = \frac{AD}{PM}$.
Q14	In Δ ABC, ∠ B = 90° and D is the mid-point of BC. Prove that $AC^2 = AD^2 + 3CD^2$.
Q15	Diagonals AC and BD of a trapezium ABCD with AB ll DC intersect each other at the point O. Show that $\frac{OA}{OC} = \frac{OB}{OD}$.
SECTION D (4 marks)	
Q16	In Figure, ABC is a triangle in which ∠ ABC > 90° and AD ⊥ CB produced. Prove that $AC^2 = AB^2 + BC^2 + 2\ BC.\ BD$. 
Q17	If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, prove that the other two sides are divided in the same ratio.
Q18	Prove that in a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides.

Answers

Answers	**1**	A	**2**	C	**3.**	C	**4**	A
	5	5 : 11	**6**	30cm	**7**	6cm	**10**	1: 4

****