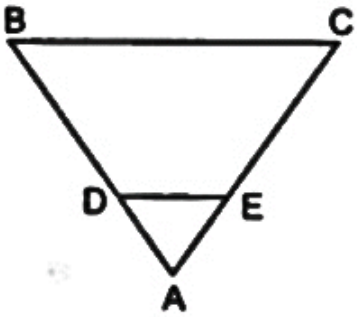
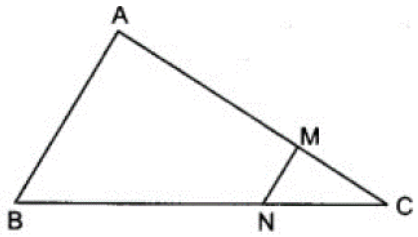
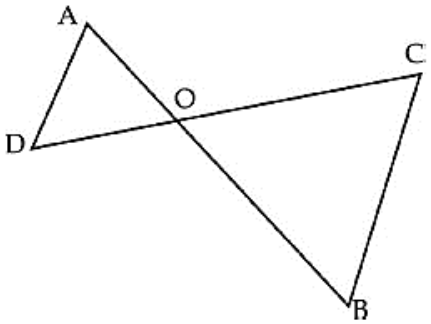
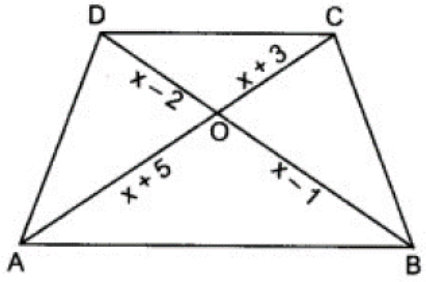
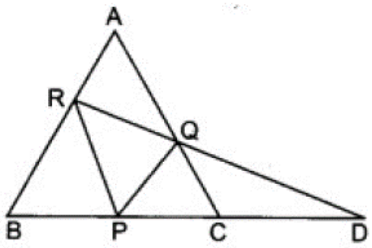
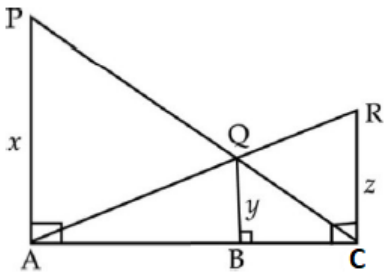
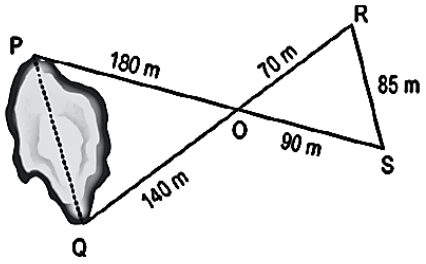
INDIAN SCHOOL AL WADI AL KABIR

Class X, Mathematics

Worksheet-Triangles(DTQ)

05 – 08 - 2023

Q. No.	Questions of 2 Mark each.
1.	In figure, DE || BC in ΔABC such that that BC = 8 cm, AB = 6 cm and DA = 1.5 cm. Find DE. 
2.	In figure, MN || AB, BC = 7.5 cm, AM = 4 cm and MC = 2 cm. Find the length of BN. 
3.	DE is drawn parallel to base BC of ΔABC meeting AB at D and AC at E. If $\frac{AB}{BD} = 4$ and CE = 2 cm, find the length of AE.
4.	If ΔABC is similar to ΔDEF such that 2AB = DE and BC = 8 cm then find EF.
5.	In the given figure, OA×OB = OC×OD. Show that ∠A=∠C and ∠B = ∠D. 

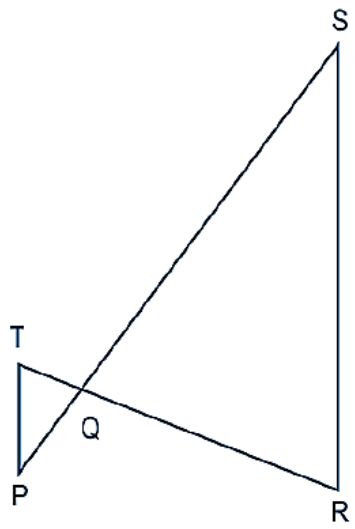
Questions of 3 marks each	
6.	In the given figure, if AB || DC, find the length of AC and BD. 
7.	In the given figure PQ || BA; PR || CA. If PD = 12 cm. Find BD ×CD. 
8.	If one diagonal of a trapezium divides the other diagonal in the ratio 1 : 3. Prove that one of the parallel sides is three times the other.
9.	In figure, AP || BQ || CR, AP = x units, BQ =y units and CR = z units, prove that $\frac{1}{x}+\frac{1}{z}=\frac{1}{y}$ 
10.	A geologist asked his assistant Annie, if the length of the lake PQ, can be found from the information shown below. Annie said, "it is possible to find the length of lake PQ." Is Annie's statement correct? Justify your answer with valid reasons. **(CFQ)** 

Questions of 5 marks each

11. In a Mathematics class, a teacher drew the following figure where $\frac{TQ}{QR} = \frac{1}{3}$. She then asked, "What is the sufficient condition to prove that ΔTPQ~ΔQRS?"

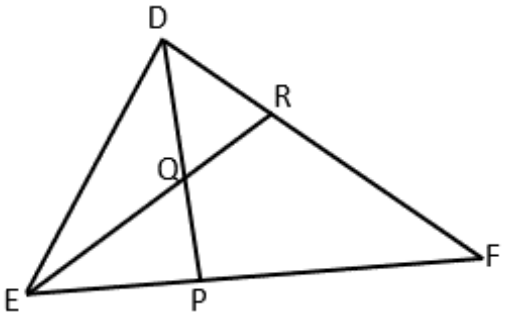
- Darsh said that it is sufficient if it is given that $\frac{TP}{SR} = \frac{1}{3}$.
- Bhargav said that it is sufficient if it is given that ∠P = ∠S.
- Tanvi said that it is sufficient if it is given that $\frac{PQ}{QS} = \frac{1}{3}$.

Examine whether each of their responses is correct or incorrect. Give reasons.**(CFQ)**

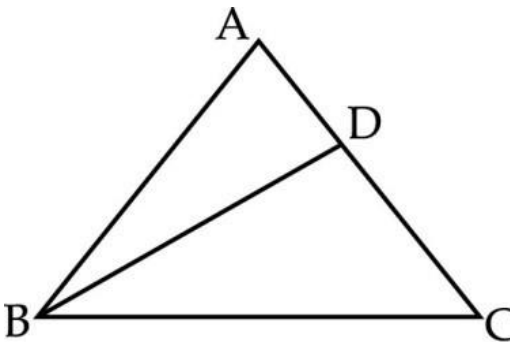


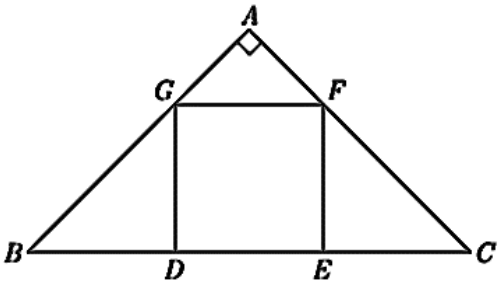
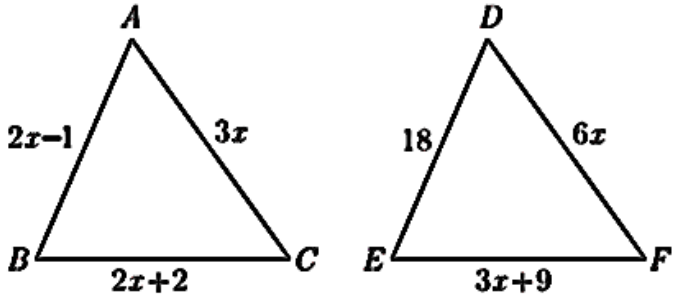
12. P is the midpoint of EF and Q is the midpoint of DP.If EQ when produced meets DF at R, prove that RD = $\frac{1}{3}$ DF. **(CFQ)**

(Hint: Draw PS ‖ QR)



13. In the given figure, ABC is a triangle in which AB = AC and D is a point on AC such that $BC^2 = AC \times CD$. Prove that BD = BC. **(CFQ)**



14.	In Figure DEFG is a square in a triangle ABC right angled at A. Prove that (i) ΔAGF ~ ΔDBG (ii) ΔAGF ~ ΔEFC 
15	In Figure, if Δ*ABC* ~Δ*DEF* and their sides of lengths (in cm) are marked along them, then find the lengths of sides of each triangle. 

Answers

Answers	**1**	2 cm	**2**	5 cm	**3**	6 cm	**4**	16 cm
	5	Proof	**6**	22 cm, 11cm	**7**	144 cm^2	**8**	Proof
	9	Proof	**10**	Prove similarity and find the length of PQ	**11**	Darsh and Tanvi is correct.	**12**	Proof
	13	Proof	**14**	Proof	**15**	9cm, 12cm, 15cm, 18cm, 24cm, 30cm		