

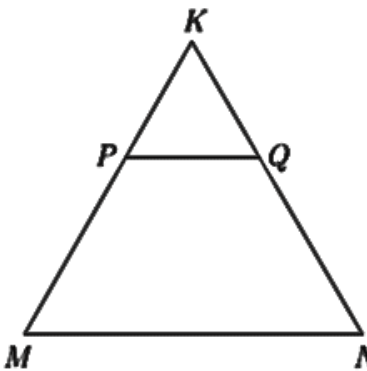
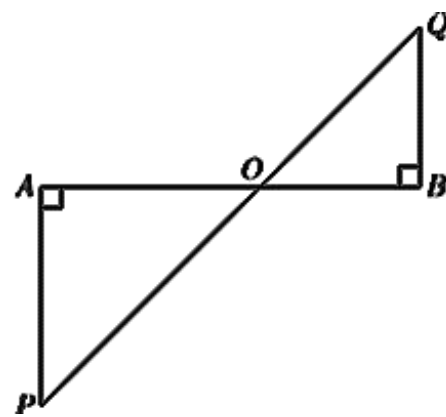
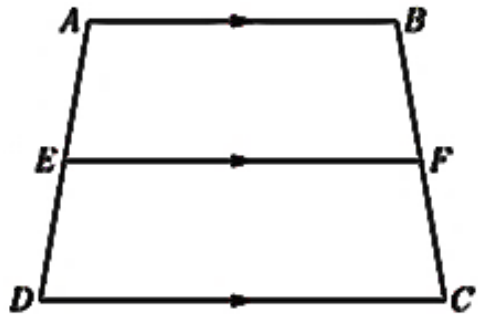
INDIAN SCHOOL AL WADI AL KABIR

Class X, Mathematics

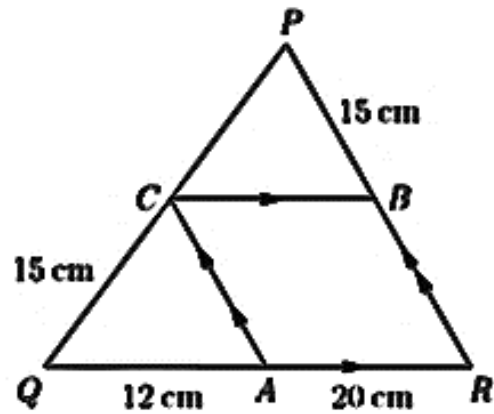
Worksheet-Triangles

21- 08 - 2022

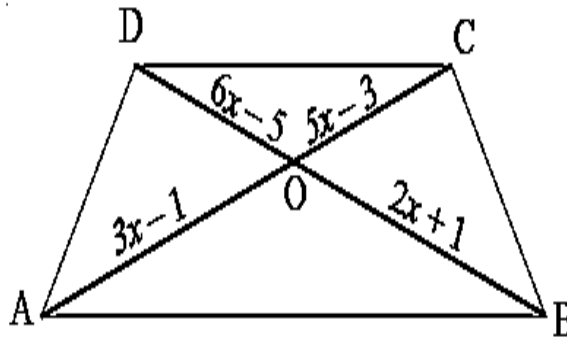
Q. No.	Questions of 1 Mark each.						
1.	In $\triangle DEW$, A and B are points on DE and DW respectively and $AB \parallel EW$. If $AD = 4$ cm, $DE = 12$ cm and $BW = 24$ cm, the value of DB is:						
A	6 cm	B	8 cm	C	10 cm	D	12 cm
2.	In $\triangle ABC$, D and E are points on AB and AC respectively and $DE \parallel BC$. If $AD = x$, $BD = x-1$, $AE = x-3$ and $CE = x-5$, the value of x is:						
A	-3	B	3	C	9	D	-9
3.	ABCD is a trapezium in which $AB \parallel DC$ and P, Q are points on AD and BC respectively such that $PQ \parallel DC$. If $PD = 18$ cm, $BQ = 35$ cm and $QC = 15$ cm, then AD is:						
A	55 cm	B	57 cm	C	60 cm	D	42 cm
4.	In $\triangle ABC$, D and E are points on AB and AC respectively and $DE \parallel BC$. If $AB = 7.6$ cm, $AD = 1.9$ cm, then AE: EC is:						
A	1:3	B	3:1	C	1:4	D	4:1
5.	If $\triangle ABC \sim \triangle DEF$ is such that $2AB = DE$ and $BC = 8$ cm, then EF is:						
(A)	4cm	(B)	16 cm	(C)	8 cm	(D)	112 cm
6.	What is the value of x in given figure? <div style="text-align: center; margin-top: 20px;"> </div>						

7.	<p>In the figure, PQ is parallel to MN. If $\frac{KP}{PM} = \frac{4}{13}$ and $KN = 34$ cm, then find KQ.</p> 
8.	<p>A vertical stick 12 m long casts a shadow 8m long on the ground. At the same time a tower casts the shadow 40 m long on the ground. Determine the height of the tower.</p>
9.	<p>The perimeters of two similar triangles ABC and LMN are 60 cm and 48 cm respectively. If $LM = 8$ cm, what is the length of AB?</p>
10.	<p>In the given figure, if $\angle A = 90^\circ, \angle B = 90^\circ$, $OB = 4.5$cm $OA = 6$ cm and $AP = 4$ cm then find QB.</p> 
Questions of 2 marks each	
11.	<p>In the given figure, if ABCD is a trapezium in which $AB \parallel CD \parallel EF$, then prove that $\frac{AE}{ED} = \frac{BF}{FC}$.</p> 

12. In the given figure, $CB \parallel QR$ and $CA \parallel PR$. If $AQ = 12$ cm, $AR = 20$ cm, $PB = CQ = 15$ cm, calculate PC and BR .

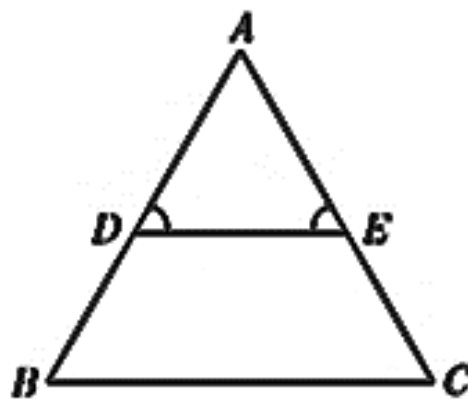


13. In the given fig., $AB \parallel DC$ and diagonals AC and BD intersect at O . If $OA = 3x - 1$ and $OB = 2x + 1$, $OC = 5x - 3$ and $OD = 6x - 5$, find the value of x .



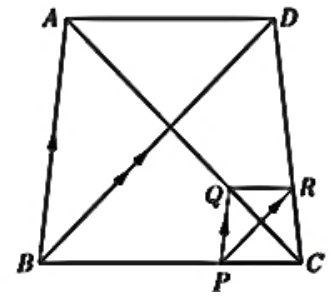
14. AD and PM are medians of triangles ABC and PQR respectively where $\Delta ABC \sim \Delta PQR$. Prove that $\frac{AB}{PQ} = \frac{AD}{PM}$

15. In Figure $\angle D = \angle E$ and $\frac{AD}{DB} = \frac{AE}{EC}$ prove that ΔBAC is an isosceles triangle.

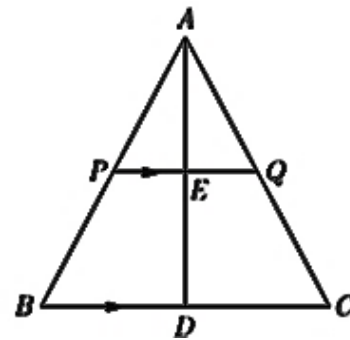


Questions of 3 marks each

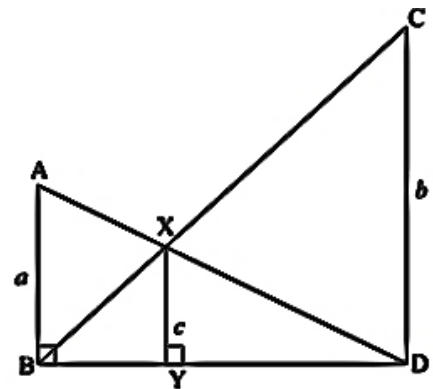
16. In the given figure, two triangles ABC and DBC lie on the same side of BC such that $PQ \parallel BA$ and $PR \parallel BD$. Prove that $QR \parallel AD$.



17. In a $\triangle ABC$, let P and Q be points on AB and AC respectively such that $PQ \parallel BC$. Prove that the median AD bisects PQ.

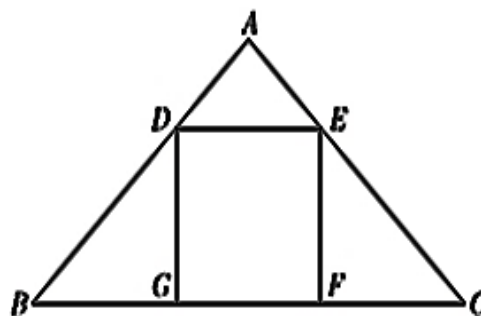


18. In the figure, if $\angle ABD = \angle XYD = \angle CDB = 90^\circ$. $AB = a$, $XY = c$ and $CD = b$, then prove that $c(a + b) = ab$.



Questions of 5 marks each

19. In the given figure, DEFG is a square and $\angle BAC = 90^\circ$. Show that $FG^2 = BG \times FC$.

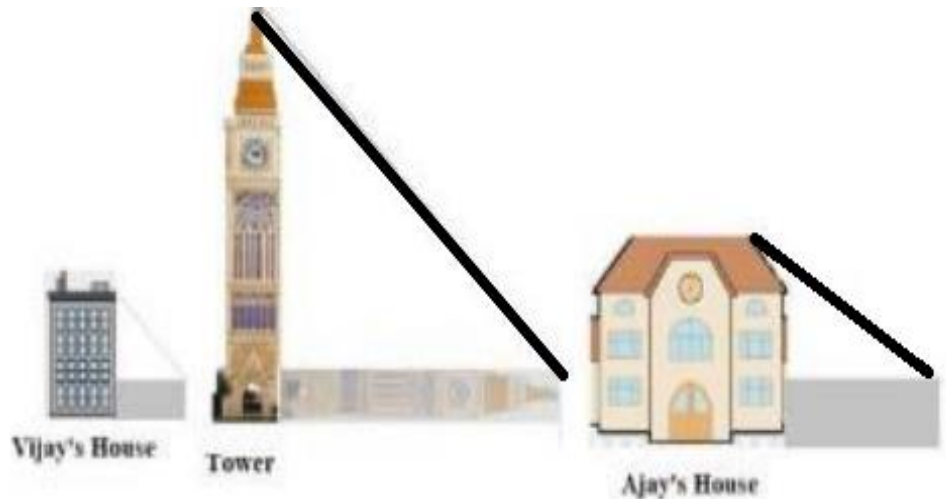


20.

Case Study Based:

Vijay is trying to find the average height of a tower near his house. He is using the properties of similar triangles. The height of Vijay’s house is 20m when Vijay’s house casts a shadow 10m long on the ground. At the same time, the tower casts a shadow 50m long on the ground and the house of Ajay casts 20m shadow on the ground.

- (i) What is the height of the tower?
- (ii) What will be the length of the shadow of the tower when Vijay’s house casts a shadow of 12m?
- (iii) What is the height of Ajay’s house?
- (iv) When the tower casts a shadow of 40m, same time what will be the length of the shadow of Ajay’s house?



Answers

Answers	1	D	2	A	3	C	4	A
	5	B	6	$\frac{ac}{b+c}$	7	8cm	8	60m
	9	10cm	10	3 cm	12	25 cm, 9 cm	13	2
	20	(i)100 m (ii)60 m (iii) 40 m (iv)16m						