|	**INDIAN SCHOOL AL WADI AL KABIR**
![Department of Mathematics logo]	**Department: Mathematics**
	Class X **Worksheet – Triangles (DTQ)**
	12 – 08 - 2024

Questions of 2 marks each

Q.1.	X and Y are points on the sides AB and AC respectively of a triangle ABC such that $\frac{AX}{AB} = \frac{1}{4}$, AY= 2 cm and YC = 6 cm. Find whether XY ∥ BC or not.
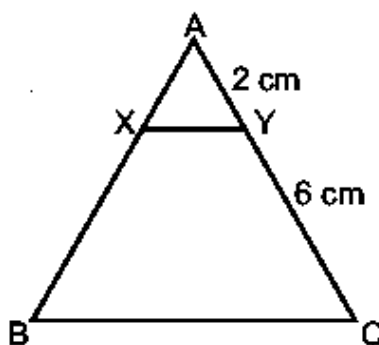
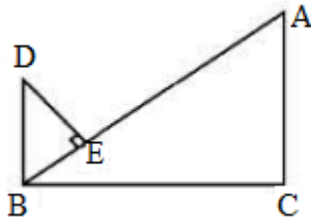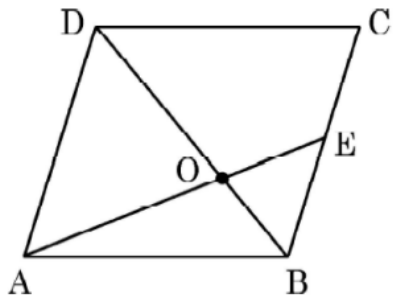| **Q.2.**	In the given fig, D and E are points on sides AB and AC of ΔABC such that ∠B = ∠AED. Show that ΔABC ~ ΔAED.
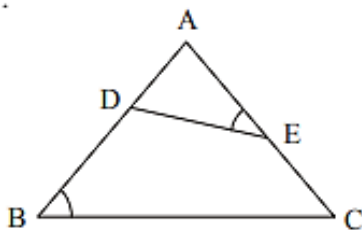
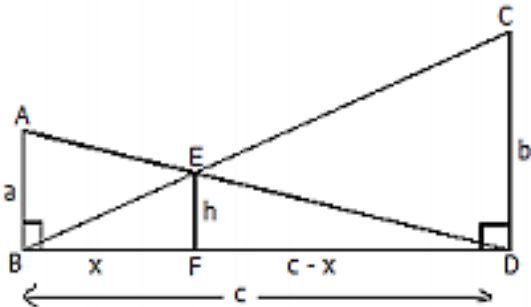| **Q.3.**	In the given figure, XZ is parallel to BC. AZ = 3 cm, ZC = 2 cm, BM =3 cm and MC = 5 cm. Find the length of XY.
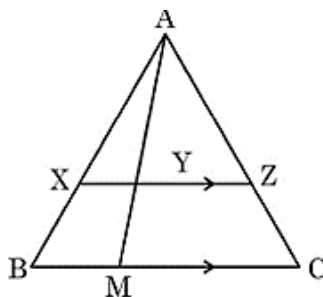
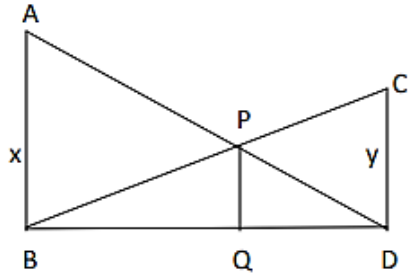| Q.4.	In Δ ABC, D and E are points on the sides AB and AC respectively such that BD = CE. If ∠ B = ∠ C, then show that DE ∥ BC.

Questions of 3 marks each

Q.5.	In the given figure, DB ⊥ BC, DE ⊥ AB and AC ⊥ BC. Prove that $\frac{BE}{DE} = \frac{AC}{BC}$.

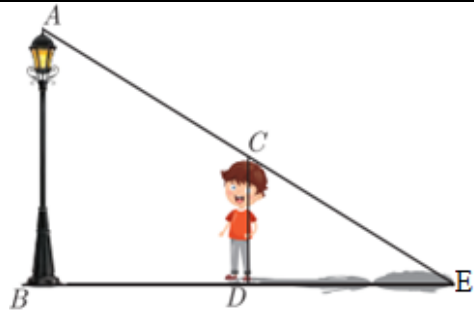| Q.6.	In the given figure, ABCD is a parallelogram. AE divides the line segment BD in the ratio 2: 1. If BE = 1.5cm, then find the length of BC.

Questions of 5 marks each

Q.7.	Two poles of height a and b (b > a) are c metres apart. Prove that the height h (in metres) of the point of intersection of the lines joining the top of each pole to the foot of the opposite pole is $\frac{ab}{a+b}$.

Q.8.	In fig, AB∥PQ∥CD, AB = x units, CD = y units and PQ = z units. Prove that $\frac{1}{x} + \frac{1}{y} = \frac{1}{z}$.
Q.9.	ABCD is a trapezium with AB ∥ CD. AC and BD intersect at E. If ΔAED ~ ΔBEC, then prove that AD = BC.

Case study question (4 marks)

Q.10.	Rohan is very intelligent in Mathematics. He always tries to relate the concept of Math in daily life. One day he was walking away from the base of a lamp post at a speed of 1 m/s. Lamp is 4.5 m above the ground. Based on the above information, answer the following questions:

    (i)   Name the similar triangles in the figure and state the similarity criterion.

    (ii)   If after 2 seconds, length of shadow is 1 meter, what is the height of Rohan?

(iii a) If the length of the shadow is 3.5 m, what is the distance of Rohan from the pole?

<div align="center">OR</div>

(iii b) What will be the length of his shadow after 4 seconds?

ANSWERS

Q.1	Parallel	Q.3.	1.8cm	Q.6	3 cm	Q.10(i)	ΔABE ~ ΔCDE (AA similarity)
Q.10(ii)	1.5 m	Q.10(iii a)	7 m	Q.10(iii b)	2 m		