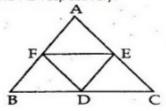


Exercise 9C

Question 8:

Given: A triangle ABC in which D,E and F are the mid points of BC, AC and AB respectively.



To prove : $\angle EDF = \angle A$

 $\angle DEF = \angle B$

and

 $\angle DFE = \angle C$

Proof:

Midpoint Theorem: The line segment joining the midpoints of any two sides of a triangle is parallel to the third side and equal to half of it.

In ΔAFE and ΔDFE

$$AF = \frac{1}{2}AB = ED$$

[By Mid point Theorem]

$$AE = \frac{1}{2}AC = FD$$

[By Mid point Theorem]

FE = EF [Common]

Thus by Side-Side-Side criterion of congruence, we have

 $\Delta AFE \cong \Delta DFE$

[By SSS]

The corresponding parts of the congruent triangles are equal.

$$\angle A = \angle FDE$$

[C.P.C.T.]

Similarly we can prove that

$$\angle B = \angle DEF$$

and
$$\angle C = \angle DFE$$
.

********* END ********