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Properties of Triangles Ex 15.3 Q6
Answer:
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In △ ABC, ∠BAC and ∠EAF are vertically opposite angles.
Hence, we can say that:
\angle BAC = \angle EAF = 45^{\circ}
Considering the exterior angle property, we can say that:
\angle BAC + \angle ABC = \angle ACD = 105^{\circ}
\Rightarrow \angle ABC = 105^{\circ} - 45^{\circ} = 60^{\circ}
Because of the angle sum property of the triangle, we can say that:
\angle ABC + \angle ACB + \angle BAC = 180^{\circ}
\angle ACB = 75^{\circ}
Therefore, the angles are 45°, 60° and 75°.
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Properties of Triangles Ex 15.3 Q7 Answer:

In the given triangle, the angles are in the ratio 3:2:1. Let the angles of the triangle be 3x, 2x and x. Because of the angle sum property of the triangle, we can say that: $3x + 2x + x = 180^{\circ}$ $\Rightarrow 6x = 180^{\circ}$ Or, x = 30° ...(i) Also, $\angle ACB + \angle ACE + \angle ECD = 180^{\circ}$ $x + 90^{\circ} + \angle ECD = 180^{\circ} (\angle ACE = 90^{\circ})$ ∠ECD = 60° [From (i)]

Properties of Triangles Ex 15.3 Q8

Answer:

Here,

Internal angle at A + External angle at $A = 180^{\circ}$ Internal angle at $A + 103^{\circ} = 180^{\circ}$ Internal angle at A = 77° Internal angle at B + External angle at $B = 180^{\circ}$ Internal angle at $B + 74^{\circ} = 180^{\circ}$ Internal angle at B = 106° Sum of internal angles at A and $B = 77^{\circ} + 106^{\circ} = 183^{\circ}$

It means that the sum of internal angles at A and B is greater than 180°, which cannot be possible.

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