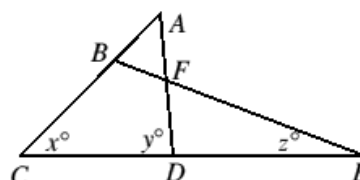


Question

Question ID: 878



8. In the figure shown, $AB = AF$ and ABC , AFD , BFE and CDE are all straight lines.
Which of the following expressions gives z in terms of x and y ?



A $\frac{y-x}{2}$

B $y - \frac{x}{2}$

C $\frac{y-x}{3}$

D $y - \frac{x}{3}$

E $y - x$

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Answer

8. A In triangle ACD , $\angle CAD = (180 - x - y)^\circ$.
As $AB = AF$, triangle ABF is isosceles hence $\angle ABF = \angle AFB = \frac{1}{2}(x + y)^\circ$.
Thus $\angle DFE = \angle AFB = \frac{1}{2}(x + y)^\circ$ (vertically opposite angles). Now in triangle DFE , $\angle FDE = (180 - y)^\circ$. Hence $z^\circ = 180^\circ - \angle DFE - \angle FDE = \frac{1}{2}(y - x)^\circ$.

