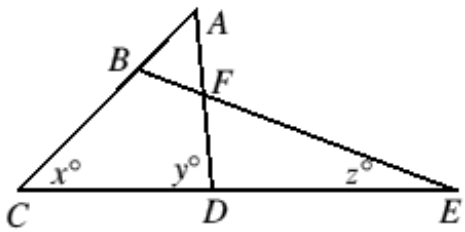
8. In the figure shown, $AB = AF$ and ABC, AFD, BFE and CDE are all straight lines.
Which of the following expressions gives z in terms of x and y?



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