13	10	Which inequality has the same solution as $\lvert x+2\rvert + \lvert x-3\rvert = 5$? (A) $\frac{5}{3-x} \geq 1$ (B) $\frac{1}{x-3} - \frac{1}{x+2} \leq 0$ (C) $x^2 - x - 6 \leq 0$ (D) $\lvert 2x-1\rvert \geq 5$	1

C

State Mean: **0.39**

For $|x + 2| + |x - 3| = 5$, consider four cases:

$x + 2 + x - 3 = 5$

$2x - 1 = 5$

$2x = 6$

$x = 3$

$-(x + 2) - (x - 3) = 5$

$-2x + 1 = 5$

$-2x = 4$

$x = -2$

$-(x + 2) + x + 3 = 5$ … No soln

$x + 2 - (x - 3) = 5$ … No soln

Check range of solns:

Consider $x = 0$: Yes!

$\therefore -2 \leq x \leq 3$

which is solution of $x^2 - x - 6 \leq 0$.

* These solutions have been provided by *projectmaths* and are not supplied or endorsed by the Board of Studies