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- 2014 10** Which equation describes the locus of points (x, y) which are equidistant from the distinct points $(a + b, b - a)$ and $(a - b, b + a)$? **1**
- (A) $bx + ay = 0$ (B) $bx + ay = 2ab$ (C) $bx - ay = 0$ (D) $bx - ay = 2ab$

C

The locus is the perpendicular bisector of the two points:

$$\text{Gradient: } \frac{(b + a) - (b - a)}{(a - b) - (a + b)} = \frac{2a}{-2b}$$

$$= -\frac{a}{b} \quad \therefore \text{perpendicular has gradient} = \frac{b}{a}$$

$$\text{Midpoint: } \left(\frac{a + b + a - b}{2}, \frac{b - a + b + a}{2} \right) = (a, b)$$

$$\text{Equation: } y - b = \frac{b}{a} (x - a)$$

$$ay - ab = bx - ab$$

$$bx - ay = 0$$

State Mean:

0.39

* These solutions have been provided by [projectmaths](#) and are not supplied or endorsed by BOSTES.