

17 B is the point $(-3, 1)$ and D is the point $(-5, 9)$.
 BD is a diagonal of the kite $ABCD$.

(a) The ratio of the lengths of the diagonals $BD : AC = 2 : 3$.

Work out the length of AC .

Give your answer as a surd in its simplest form.

..... [5]

(b) Find the coordinates of the midpoint of BD .

(..... ,) [2]

(c) The diagonal AC of the kite passes through the midpoint of BD .

Find an equation of AC .

Give your answer in the form $y = mx + c$.

$y =$ [4]