

- 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  $y = mx + c$ .