Midpoints and Lengths of Lines

Find the midpoints of the line segments joining:

(a) (4, 5) and (8, 1)

(b) (6, 0) and (12, 4)

(c) (8, -2) and (4, -10)

(d) (3, -1) and (-5, 1)

(e) (4, 7) and (3, 3)

(f) (9, -1) and (6, 3)

(g) (0, 5) and (-4, 8)

(h) (-2, -3) and (4, -4)

(i) (1.5, 3) and (7.5, 2.5)

(j) (-3.5, 9) and (-2.5, 4)

(a) (6,3)
(b) (9,2)
(c) (6,-6)
(d) (-1,0)
(e) $(3\frac{1}{2}, 5)$
(f) $(7\frac{1}{2}, 1)$
(g) $(-2, 6\frac{1}{2})$
(h) $(1, -3\frac{1}{2})$
(i) (4.5, 2.75)
(j) $(-3, 6\frac{1}{2})$

Find the lengths of the line segments joining:

(a) (1, 1) and (4, 5)

(b) (8, 4) and (2, -4)

(c) (-2, 5) and (3, 17)

(d) (6, 3) and (5, -4)

(e) (4, 7) and (3, 3)

(f) (9, -1) and (6, 3)

(g) (0, 5) and (-4, 8)

(h) (-2, -3) and (4, -4)

(a) 5
(b) 10
(c) 13
(d) $5\sqrt{2} = 7.07$ (2dp)
(e) $\sqrt{17} = 4.12$ (2dp)
(f) 5
(g) 5
(h) $\sqrt{37} = 6.08$ (2dp)

The line segment AB has the midpoint (7, 5). If point A is (3, 4), what are the coordinates of point B?

The line segment CD has the midpoint (-2, 4). If point D is (5, -1), what are the coordinates of point C?

B is (11,6)

C is (-9,9)

The line segment AB has length 10. If point A is (8, 11), find as many possible positions for point B as you can.

e.g (2,3) (0,5)
(14,19) (16,5)