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)

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)

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?

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

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