

Exercise 2015-10 EL-00006(1)

(1) Calculate the mid-point of each of the following lines through the given points:

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|---------------------------------|---------------------------------|
| (a) $A(2 ; 6)$ and $B(4 ; 4)$ | (b) $C(-2 ; 0)$ and $D(-2 ; 2)$ |
| (c) $E(-1 ; 3)$ and $F(2 ; -3)$ | (d) $G(0 ; -6)$ and $H(7 ; 1)$ |
| (e) $I(-7 ; -7)$ and $J(1 ; 1)$ | (f) $K(5 ; 1)$ and $L(11 ; 1)$ |

(2) $A(-2 ; -1)$, $B(-1 ; -4)$, $C(3 ; -2)$ and $D(2 ; 1)$ form the vertices of a quadrilateral.

- (a) Determine the mid-points of the diagonals AC and BD.
- (b) What do you notice from the answers in (a)?
- (c) Which kind of quadrilateral is ABCD? Motivate.

(3) $P(-2 ; 5)$ and $Q(6 ; 7)$ lie on the circumference of a circle. PQ is a diameter of the circle.

- (a) Calculate the coordinates of the circle's centre.
- (b) Calculate the length of the radius of the circle, rounded off to the nearest integer.