1. A circle is drawn with the line joining $(2, 3)$ and $(6, 5)$ as diameter. What are the coordinates of the centre of the circle?

The centre of a circle is the midpoint of its diameter. Coordinates of the centre of the circle

$$= \left(\frac{1}{2}(x_1 + x_2), \ \frac{1}{2}(y_1 + y_2) \right)$$

$$= \left(\frac{1}{2}(2 + 6), \frac{1}{2}(3 + 5) \right)$$

$$= (4, 4)$$