

Extra Review

1) Write an equation of the perpendicular bisector of the line segment that joins the points $(-2, 6)$ and $(5, 8)$.

2) Find the coordinates of the endpoint of a line segment, given the midpoint $(-4, -6)$ and other endpoint $(5, 8)$.

3) Find the ^{distance} length of a line segment whose endpoints are $R(-3, 5)$ and $S(7, 7)$.

2)

$$\left(\frac{5}{9}, \frac{8}{14}\right)$$

$$-4 - 5 = -9 \quad M \left(\frac{-4}{9}, \frac{-6}{14}\right) \quad -6 - 8 = -14$$

$$\boxed{(-13, -20)}$$

3)

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\begin{aligned} (-3, 5) & \quad d = \sqrt{(7 - (-3))^2 + (7 - 5)^2} \\ (7, 7) & \end{aligned}$$

$$d = \sqrt{(10)^2 + (2)^2}$$

$$d = \sqrt{100 + 4}$$

$$\boxed{\sqrt{104}}$$

Simplest form

$$\sqrt{104}$$

$$\sqrt{4 \cdot 26}$$

$$\sqrt{4} \sqrt{26}$$

$$2\sqrt{26}$$

Answers

$$1) \Rightarrow m = \frac{8-6}{5-2} = \frac{2}{3}$$

$$2) \boxed{L_m = -\frac{7}{2}}$$

$$3) M = \left(\frac{-2+5}{2}, \frac{6+8}{2} \right)$$

$$M = \left(\frac{3}{2}, \frac{14}{2} \right)$$

$$\boxed{M = \left(\frac{3}{2}, 7 \right)}$$

$$4) y - y_1 = m(x - x_1)$$

$$y - 7 = -\frac{7}{2} \left(x - \frac{3}{2} \right)$$