



P is midpoint of AB

$$\therefore x_1 = \frac{-1+(-1)}{2}, y_1 = \frac{-1+4}{2}$$

$$= \frac{-2}{2} = \frac{3}{2}$$

$$= -1$$

$$P(-1, \frac{3}{2})$$

Q is midpoint of BC

$$x_2 = \frac{5+(-1)}{2}, y_2 = \frac{4+4}{2}$$

$$= \frac{4}{2} = \frac{8}{2}$$

$$= 2 = 4$$

$$Q(2, 4)$$

R is midpoint of CD

$$x_3 = \frac{5+5}{2}, y_3 = \frac{-1+4}{2}$$

$$= \frac{10}{2} = \frac{3}{2}$$

$$= 5$$

$$R(5, \frac{3}{2})$$

S is midpoint of DA

$$\therefore x_4 = \frac{5+(-1)}{2}, y_4 = \frac{-1+(-1)}{2}$$

$$= \frac{4}{2} = \frac{-2}{2}$$

$$= 2 = -1$$

$$\therefore S(2, -1)$$

$$PQ = \sqrt{(2+1)^2 + (4-\frac{3}{2})^2}$$

$$= \sqrt{9 + \frac{25}{4}}$$

$$= \frac{\sqrt{61}}{2}$$

$$QR = \sqrt{(5-2)^2 + (\frac{3}{2}-4)^2}$$

$$= \sqrt{9 + \frac{25}{4}}$$

$$= \frac{\sqrt{61}}{2}$$

$$RS = \sqrt{(2-5)^2 + (-1-\frac{3}{2})^2}$$

$$= \sqrt{9 + \frac{25}{4}}$$

$$= \frac{\sqrt{61}}{2}$$

$$SP = \sqrt{(-1-2)^2 + (\frac{3}{2}+1)^2}$$

$$= \sqrt{9 + \frac{25}{4}}$$

$$= \frac{\sqrt{61}}{2}$$

$$SQ = \sqrt{(2-2)^2 + (4+1)^2}$$

$$= \sqrt{0+25}$$

$$= \sqrt{25}$$

$$= 5$$

$$PR = \sqrt{(5+1)^2 + (\frac{3}{2}-\frac{3}{2})^2}$$

$$= \sqrt{36+0}$$

$$= \sqrt{36}$$

$$= 6$$

\therefore all sides are equal and diagonals are unequal
 \therefore PQRS is a rhombus