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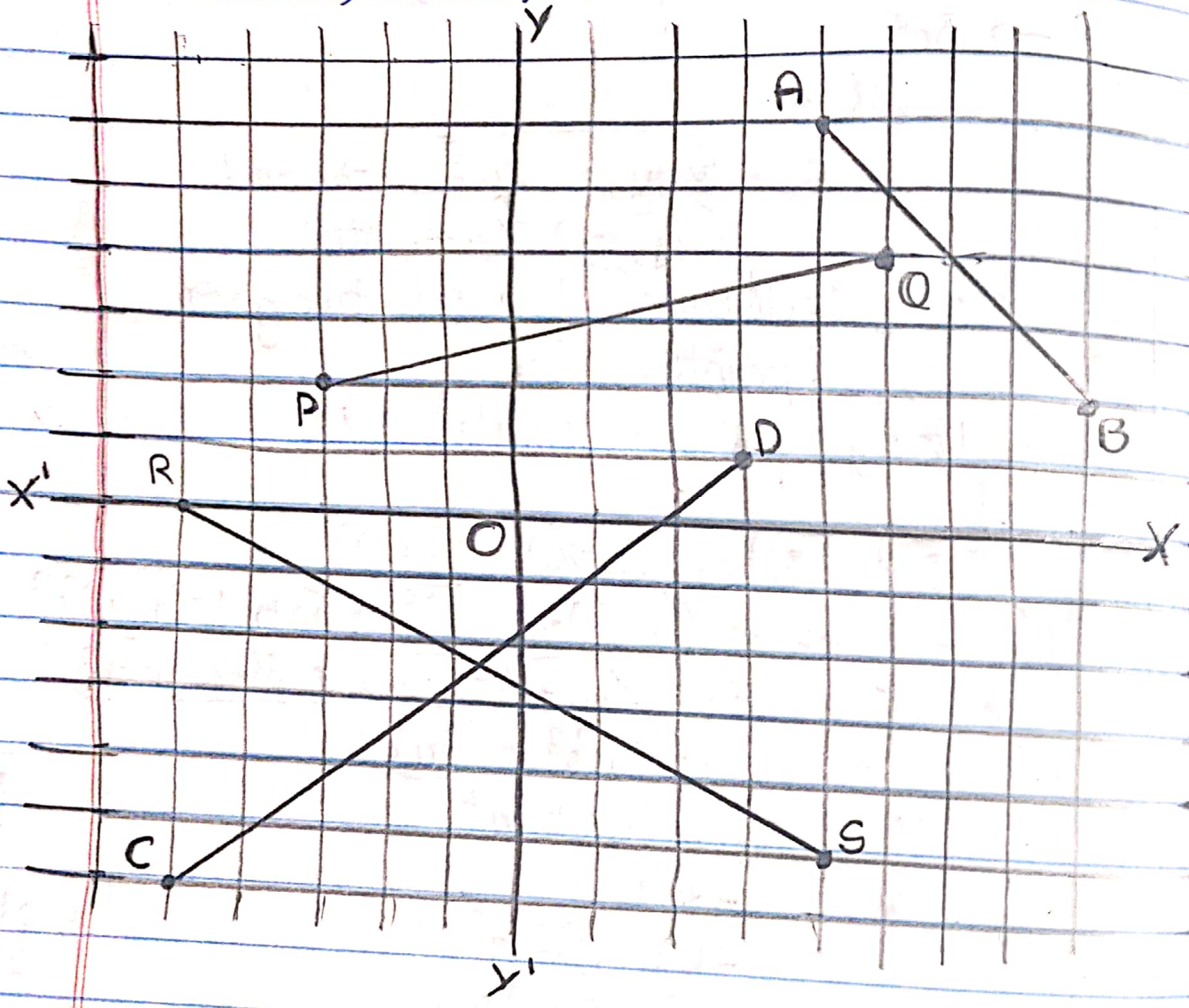
Assignment

4) From the figure given below, find the coordinates of the points A, B, P, Q, C, D, R and S. Also find the distance between;

i) A and B, ii) P and Q, iii) C and D (iv) R and S.



→ Soln,

Here,

(i) A = (4,6) and B = (8,2)

Soln,

$(x_1, y_1) = (4, 6)$ and $(x_2, y_2) = (8, 2)$

d = distance between two given points

Using distance formula,

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$
$$= \sqrt{(8-4)^2 + (2-6)^2}$$
$$= \sqrt{(4)^2 + (-4)^2}$$
$$= \sqrt{16 + 16}$$
$$= \sqrt{32}$$

$\therefore AB = 4\sqrt{2}$ units

$2 \mid 32$
$2 \mid 16$
$2 \mid 8$
$2 \mid 4$
2

$2 \times 2\sqrt{2}$
$4\sqrt{2}$

ii) P(-3,2) & Q(5,4)

Soln,

$(x_1, y_1) = (-3, 2)$ and $(x_2, y_2) = (5, 4)$

d = distance between two given points

Using distance formula,

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$
$$= \sqrt{(5+3)^2 + (4-2)^2}$$
$$= \sqrt{(8)^2 + (2)^2}$$
$$= \sqrt{64+4} = \sqrt{68} = 2\sqrt{17} \text{ units}$$

$2 \mid 68$
$2 \mid 34$
$17 \mid 17$
1

iii) C(-5,-6) & D(3,1)

-> Soln,

$(x_1, y_1) = (-5,-6)$ & $(x_2, y_2) = (3,1)$

d = distance between two points

Using distance formula,

$$d = \sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$$
$$= \sqrt{(3+5)^2+(1+6)^2}$$
$$= \sqrt{(8)^2+(7)^2}$$
$$= \sqrt{64+49}$$
$$= \sqrt{113}$$

$\therefore CD = \sqrt{113}$ units

1
64
+49
113 | 113
1

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iv) R(-5,0) and S(4,-5)

->Soln,

$(x_1, y_1) = (-5,0)$ & $(x_2, y_2) = (4,-5)$

d = distance between two points,

Using distance formula,

$$d = \sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$$
$$= \sqrt{(4+5)^2+(-5+0)^2}$$
$$= \sqrt{(9)^2+(-5)^2}$$
$$= \sqrt{81+25}$$

$\therefore RS = \sqrt{106}$ units

81
+25
2 | 106
53
X
