

1. **Problem**

What is the distance between the two points $p = (2, 4)$ and $q = (5, 4)$ in a Cartesian coordinate system?

Solution

The distance d of p and q is given by $d^2 = (p_1 - q_1)^2 + (p_2 - q_2)^2$ (Pythagorean formula).

Hence $d = \sqrt{(p_1 - q_1)^2 + (p_2 - q_2)^2} = \sqrt{(2 - 5)^2 + (4 - 4)^2} = 3$.

