

1. **Problem**

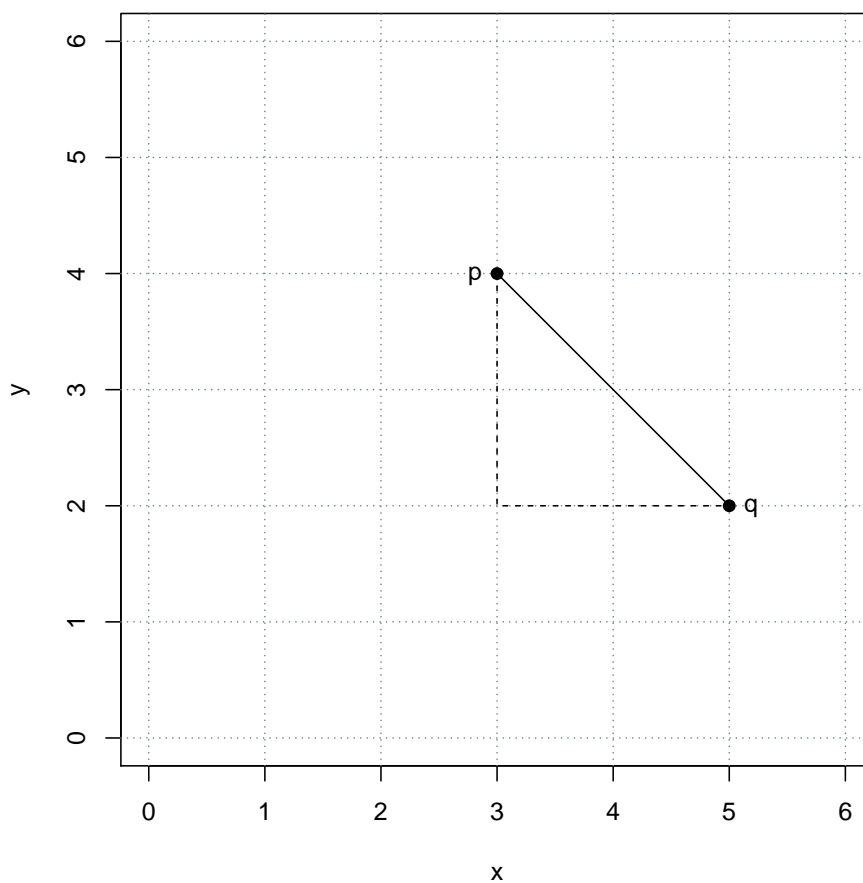
What is the distance between the two points  $p = (3,4)$  and  $q = (5,2)$  in a Cartesian coordinate system?

- (a) 4.058
- (b) 2.000
- (c) 0.827
- (d) 2.828
- (e) 4.848

**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  $d = \sqrt{(p_1 - q_1)^2 + (p_2 - q_2)^2} = \sqrt{(3 - 5)^2 + (4 - 2)^2} = 2.828$ .



- (a) False
- (b) False
- (c) False
- (d) True
- (e) False