

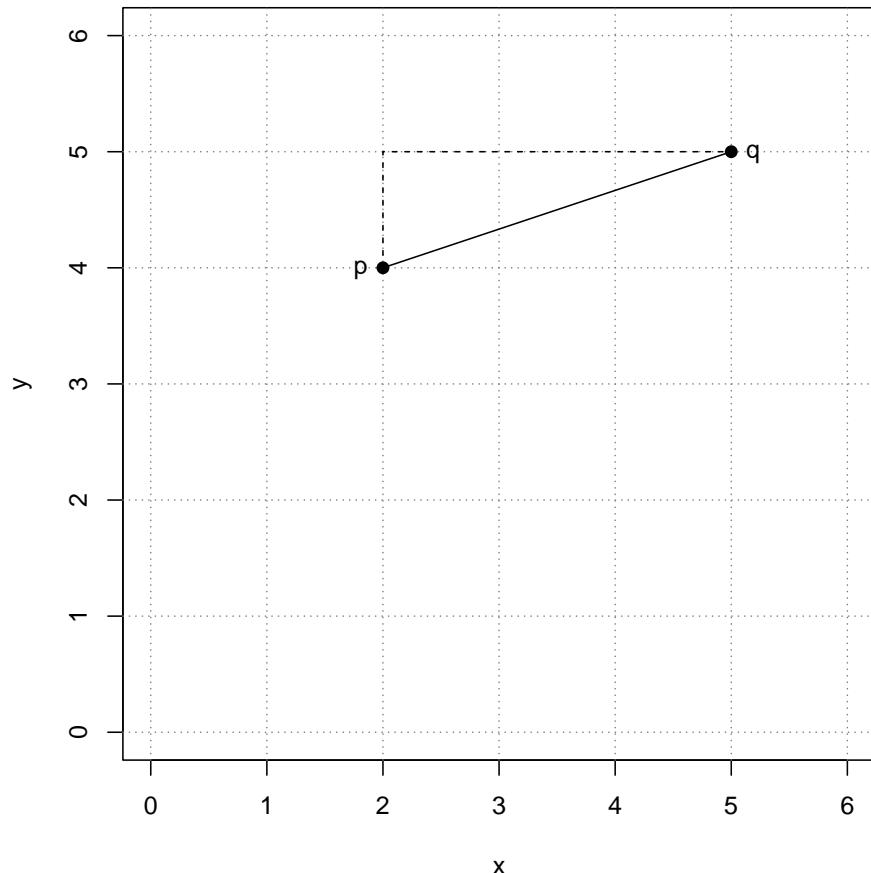
### 1. Problem

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

- (a) 1.261
- (b) 2.000
- (c) 2.695
- (d) 0.408
- (e) 3.162

### 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  $d = \sqrt{(p_1 - q_1)^2 + (p_2 - q_2)^2} = \sqrt{(2 - 5)^2 + (4 - 5)^2} = 3.162$ .



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