Question#29499

how do you find the perimeter of a rectangle with these vertices

A(-1,1)
B(3,4)
C(6,0)
D(2,-3)

Solution. The formula for a distance between two points $M(x_1, y_1), N(x_2, y_2)$:

$$d(M,N) = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}.$$

Thus, $AB = \sqrt{(-1-3)^2 + (1-4)^2} = \sqrt{16+9} = 5$

$$BC = \sqrt{(3-6)^2 + (4-0)^2} = \sqrt{9+16} = 5$$

$$CD = \sqrt{(6-2)^2 + (0-(-3))^2} = 5$$

$$AD = \sqrt{(-1-2)^2 + (1-(-3))^2} = 5.$$

Finally, the perimeter $P = AB + BC + CD + AD = 5 + 5 + 5 + 5 = 20.$

Answer. $P = 20.$