

THE DISTANCE BETWEEN TWO POINTS

Teaching Guidelines

Subject: Mathematics

Topics: Algebra

Grades: 6 - 12

Knowledge and Skills:

- Can interpret (x,y,z) notation as the position of a point in three-dimensional space
- Can find the distance between two points in three-dimensional space

Procedure: This project should be done by students individually or teams of two.

Distribute the handout and ensure that students understand the task.

Answers:

(x_1, y_1, z_1)	(x_2, y_2, z_2)	Distance
(3, 5, 8)	(4, 10, 14)	8
(4, 9, 1)	(7, 0, 12)	15
(18, 3, 22)	(5, 12, 19)	16
(-4, 12, 35)	(14, 7, 50)	24
(-12, 6, -15)	(-16, -2, 0)	17
(25, -50, 25)	(-25, 50, -25)	122
(2.25, 5.45, 9.15)	(3.15, 8.75, 7.95)	3.62
(15.36, 24.17, 18.72)	(22.78, 12.39, 32.18)	19.36
(128, 94, 276)	(253, 146, 275)	135
(265, 4, 74)	(4, 265, 74)	369
(-340, 25, 212)	(-120, -202, 0)	381
(1005, 2144, 1546)	(1010, 2150, 1550)	9

The Distance Between Two Points

Skill Set

(x_1, y_1, z_1) and (x_2, y_2, z_2) represent the coordinates of two points in three-dimensional space, in meters. Find the distance between the two points in each case. (Round the computed distances to the lowest decimal place that occurs in the coordinates.)

(x_1, y_1, z_1)	(x_2, y_2, z_2)	Distance
(3, 5, 8)	(4, 10, 14)	
(4, 9, 1)	(7, 0, 12)	
(18, 3, 22)	(5, 12, 19)	
(-4, 12, 35)	(14, 7, 50)	
(-12, 6, -15)	(-16, -2, 0)	
(25, -50, 25)	(-25, 50, -25)	
(2.25, 5.45, 9.15)	(3.15, 8.75, 7.95)	
(15.36, 24.17, 18.72)	(22.78, 12.39, 32.18)	
(128, 94, 276)	(253, 146, 275)	
(265, 4, 74)	(4, 265, 74)	
(-340, 25, 212)	(-120, -202, 0)	
(1005, 2144, 1546)	(1010, 2150, 1550)	