

13.1 Three Dimensional Graphs

Write your questions here!

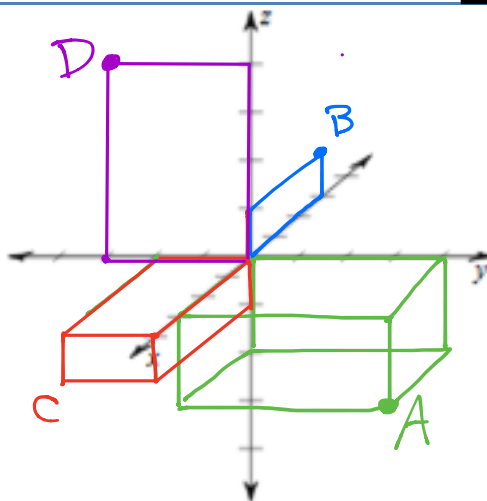
Plotting 3D Points:

$$A(3, 4, -2)$$

$$B(-3, 0, 1)$$

$$C(4, -2, -1)$$

$$D(0, -3, 4)$$



Midpoint Formula:

$$M = \left(\frac{\sum x}{2}, \frac{\sum y}{2} \right)$$

$$M = \left(\frac{\sum x}{2}, \frac{\sum y}{2}, \frac{\sum z}{2} \right)$$

Distance Formula:

$$d = \sqrt{(\Delta x)^2 + (\Delta y)^2}$$

$$d = \sqrt{(\Delta x)^2 + (\Delta y)^2 + (\Delta z)^2}$$

Ex 1: FIND MIDPOINT & DISTANCE $(2, 4, 7), (-8, 5, 3)$

$$M = \left(\frac{\sum x}{2}, \frac{\sum y}{2}, \frac{\sum z}{2} \right)$$

$$= \left(\frac{2+(-8)}{2}, \frac{4+5}{2}, \frac{7+3}{2} \right)$$

$$= \left(\frac{-6}{2}, \frac{9}{2}, \frac{10}{2} \right)$$

$$M = \left(-3, \frac{9}{2}, 5 \right)$$

$$d = \sqrt{(\Delta x)^2 + (\Delta y)^2 + (\Delta z)^2}$$

$$= \sqrt{(2-(-8))^2 + (4-5)^2 + (7-3)^2}$$

$$= \sqrt{(10)^2 + (-1)^2 + (4)^2}$$

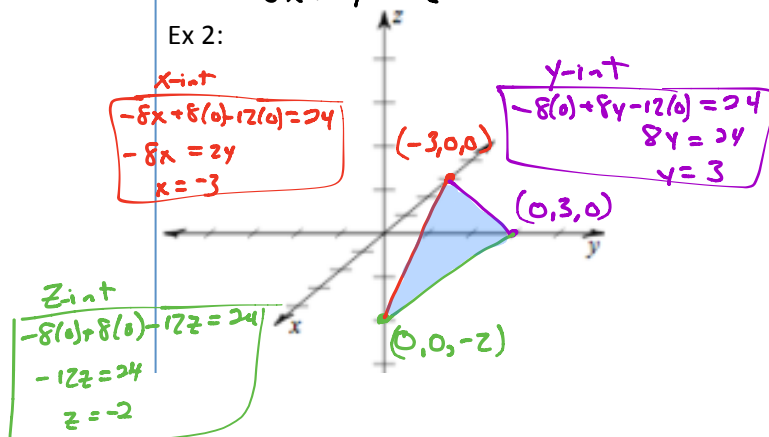
$$= \sqrt{100+1+16}$$

$$= \sqrt{117}$$

Graph a Linear Equation with Three Variables:

$$-8x + 8y - 12z = 24$$

Ex 2:



$$4x + 6y + 3z = 12$$

Ex 3:

