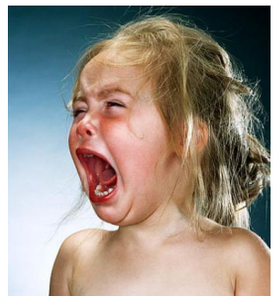
7.6 The Distance from a Point to a Plane

This is it for high school MATH....



Distance from a Point $P_o(x_o,y_o,z_o)$ to the plane with Equation $Ax+By+Cz+D=0$

$$d=\frac{|Ax_o+By_o+Cz_o+D|}{\sqrt{A^2+B^2+C^2}}$$

IN R^3

* Proof in text on Pg. 543

Ex.1 Calculate the distance from A(2,1,3) to the plane $5x-3y+2z-3=0$.

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Ex.2 a)Calculate the distance between the planes
π_1:2x-2y+z-6=0
π_2:2x-2y+z-12=0

b) Determine a point that is equidistant from π_1 and π_2.

c) Determine an equation of a plane that is equidistant from π_1 and π_2.

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Ex.3 Determine the distance between the skew lines
$L_1: \vec{r}=(-1,-3,0) + s(1,1,1), s\in R$ and
$L_2: \vec{r}=(-5,5,-8) + t(1,2,5), t\in R.$

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