Trig 10.1

Find the distance between 2 points on the coordinate plane*
Find the midpoint of 2 points*
Use analytical methods to prove geometric relationships

distance
midpoint
analytic geometry
proof (CSI)

$$(\quad)^2 + (\quad)^2 = h^2$$

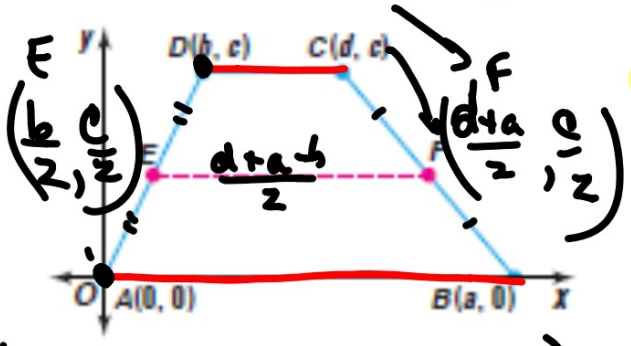
$$\left(\frac{\text{sum}}{2}, \frac{\text{sum}}{2}\right)$$

* Geometry, Algebra 1, Algebra 2

$\vec{EF} = \frac{1}{2}(\vec{CD} + \vec{AB})$

Example 5 Prove that the measure of the median of a trapezoid is equal to one half of the sum of the measures of the two bases.

Use RT. $\rightarrow EF = \sqrt{\left(\frac{d+a-b}{2}\right)^2 + (0)^2}$



$EF = \sqrt{\left(\frac{d+a-b}{2}\right)^2} = \frac{d+a-b}{2}$

$CD = \sqrt{(d-b)^2 + 0^2} = d-b$

$AB = a$

Subst. $EF = \frac{1}{2}(CD + AB)$

Simplify $\frac{d+a-b}{2} = \frac{1}{2}(d-b+a)$

$\frac{d+a-b}{2} = \frac{1}{2}d - \frac{1}{2}b + \frac{1}{2}a$

Determine whether the triangle XYZ with vertices $X(-3, 2)$, $Y(-1, -6)$, and $Z(5, 0)$ is isosceles. Justify your answer.

If isosc. 2 ≅ sides

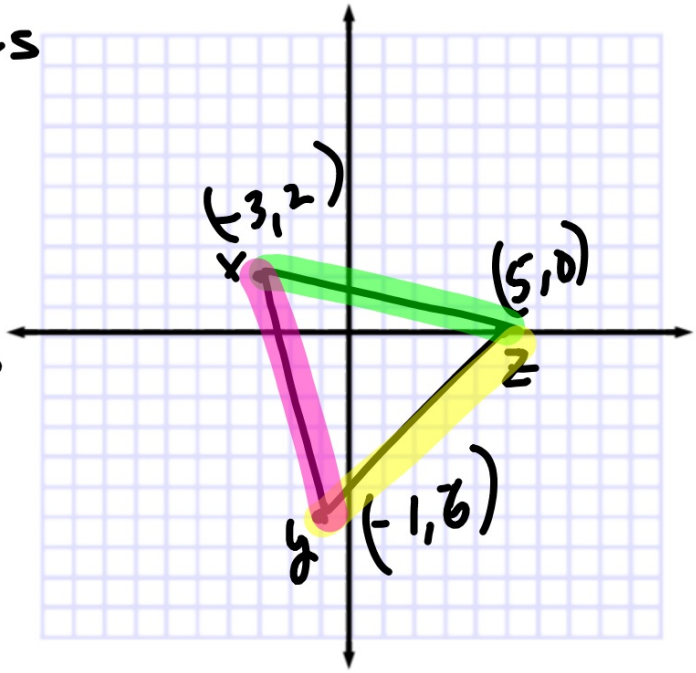
use P.T.

$XZ = \sqrt{8^2+2^2} = \sqrt{68}$

$YZ = \sqrt{6^2+6^2} = \sqrt{72}$

$XY = \sqrt{2^2+8^2} = \sqrt{68}$

$XZ = XY = \sqrt{68}$



WB 10.1 + 29