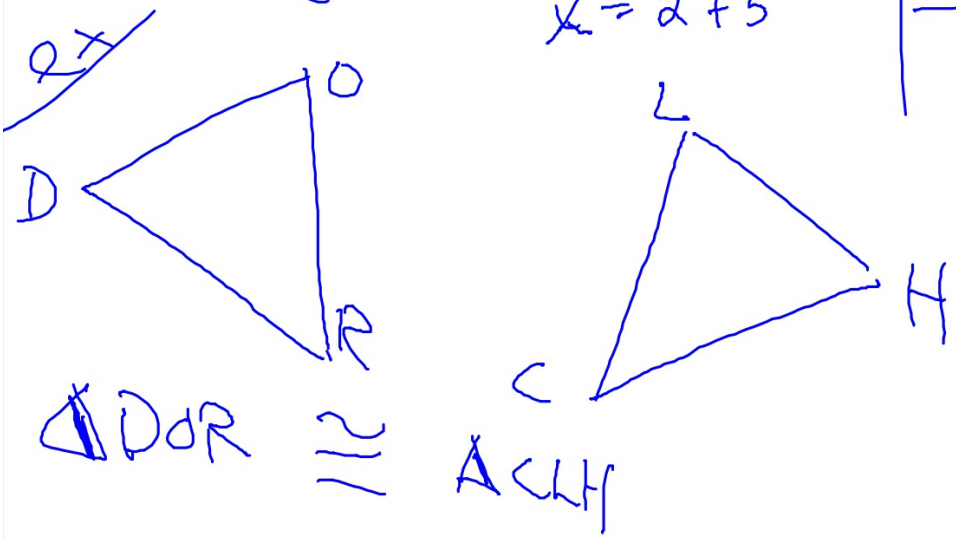
Congruent: mean "the same" Shapes

vs. **Equal:** numbers

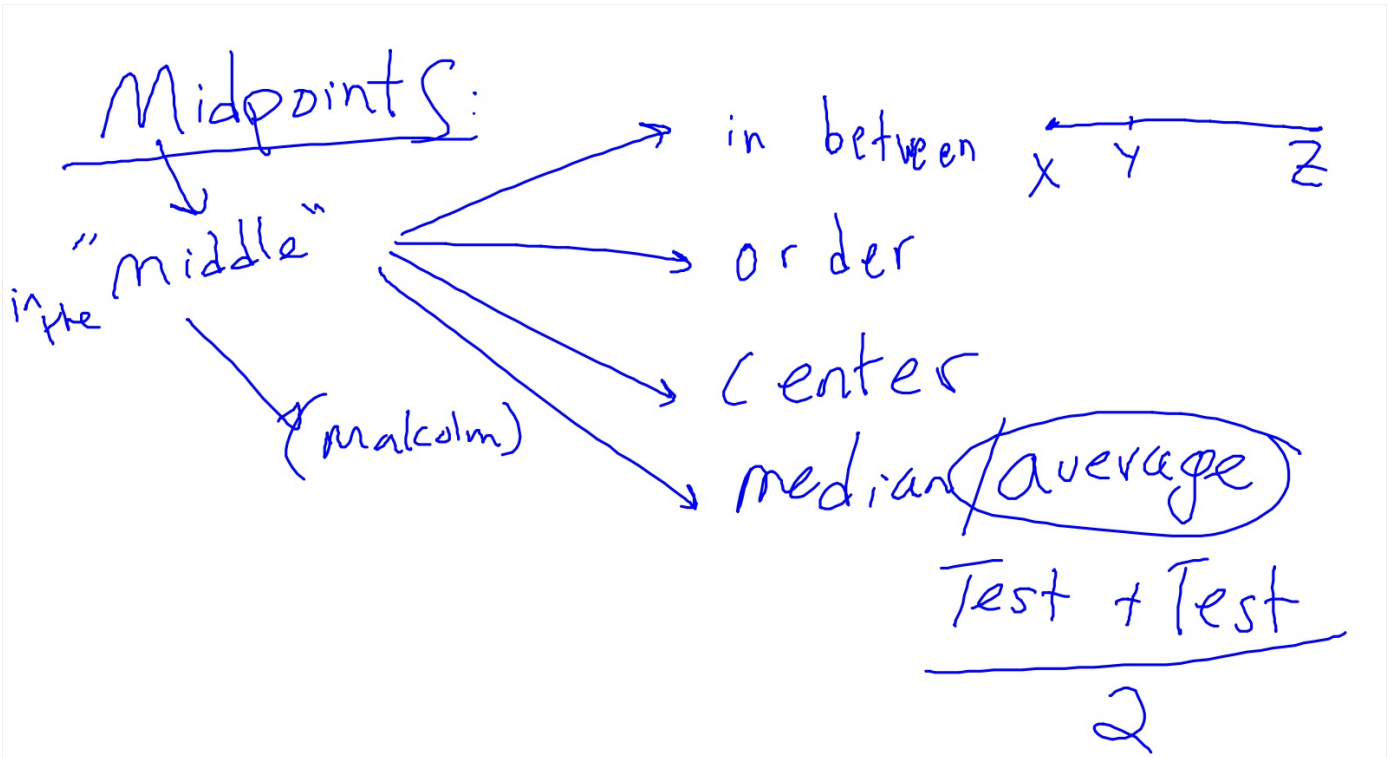
(=) $5 = 5$

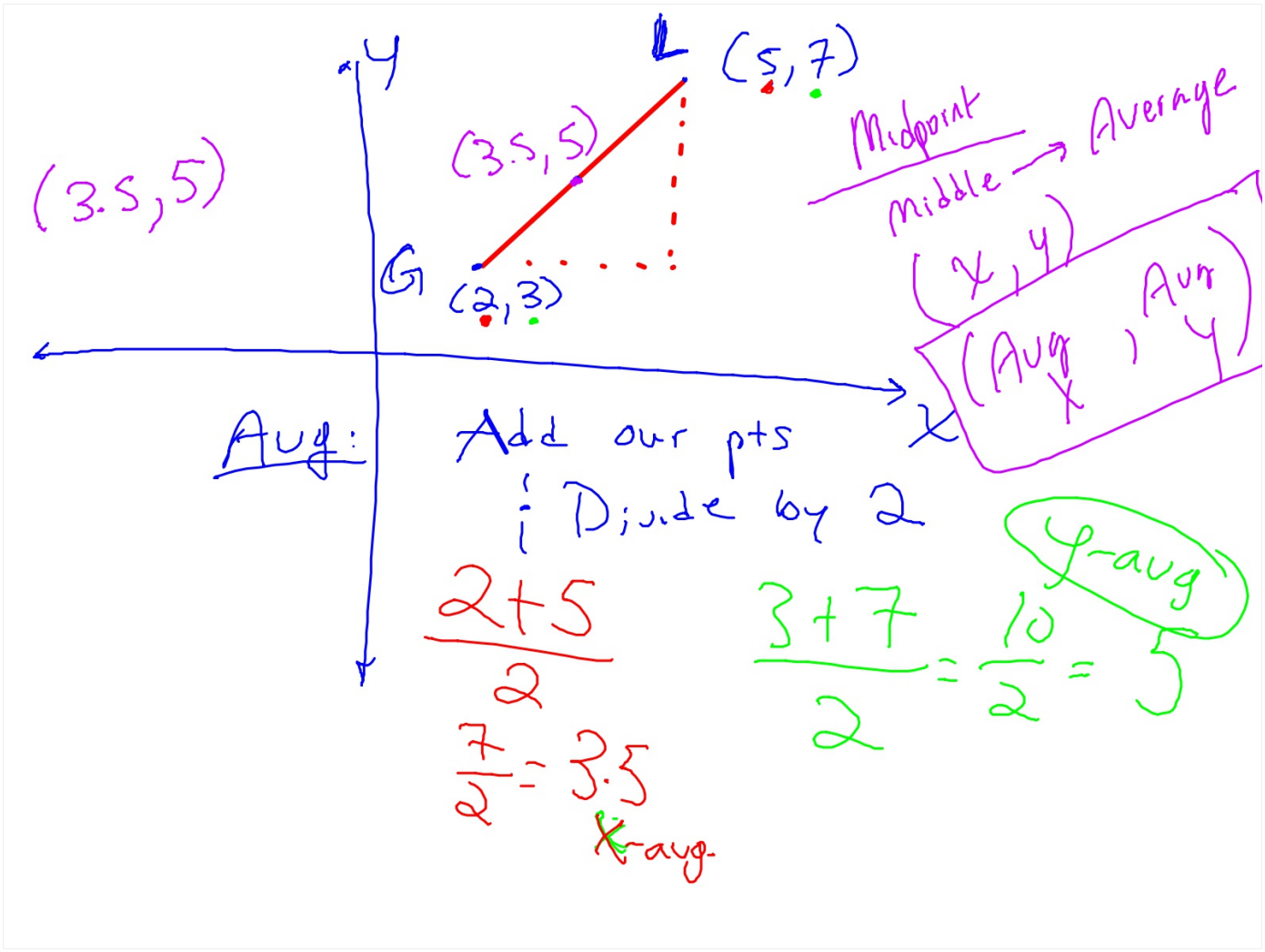
$x = 2 + 5$

Congruent: $\cong$	same shape
Equal $=$	same number.



$\triangle DOR \cong \triangle CLH$


Midpoints:
"middle"
in the
(malcolm)
in between
X Y Z
order
center
median/average
Test + Test
2


y
x
(5,7)
(3.5,5)
(3.5,5)
(2,3)
Midpoint
middle → Average
(x, y)
(Avg x, Avg y)
Avg:
Add our pts
Divide by 2
2+5
2
7
2 = 3.5
x-avg
3+7
2
10
2
5
y-avg

ex.

A (2.5, 1.5) B (−3.5, −2.5)

What's the midpoint?

(−0.5, −0.5)

$\left(\frac{-1}{2}, \frac{-1}{2}\right)$

A(5, -3)

B(-12, 13)

x

$5 + -12$

$5 - 12$

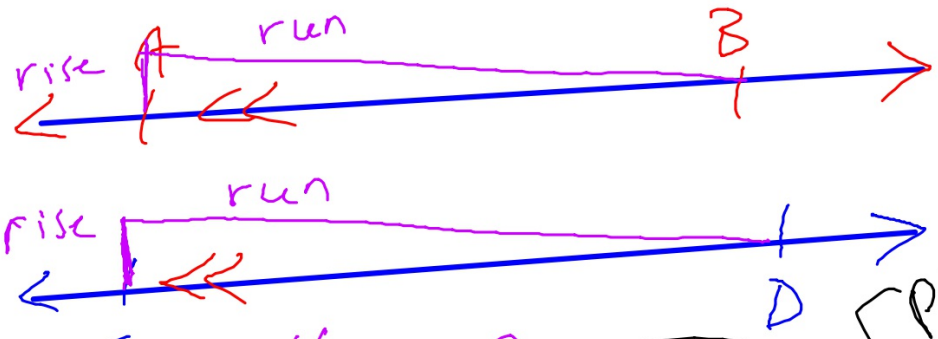
$\frac{-7}{2}$

$-3 + 13$

$\frac{10}{2}$

$(-3.5, 5)$

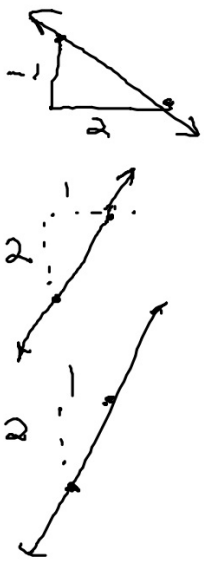
Parallel lines: don't cross/intersect.



these lines have equal slope.

parallel = same slope

ex Are these lines parallel? Explain.



$$\begin{cases} y = -\frac{1}{2}x + 5 \\ 2x - y = 12 \end{cases}$$

Nope!

$-\frac{1}{2} \neq 2$

$2x - y = 12$

$-2x \quad -2x$

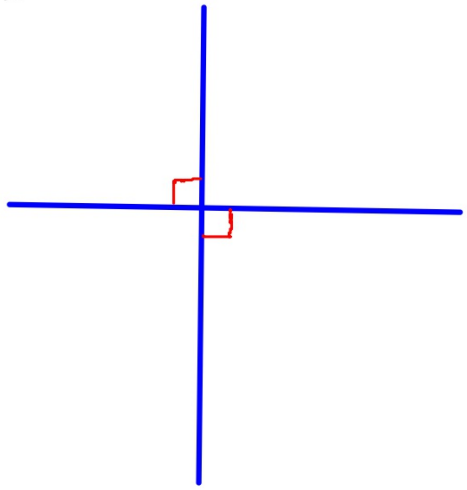
$-y = -2x + 12$

$\frac{-y}{-1} = \frac{-2x}{-1} + \frac{12}{-1}$

$y = 2x - 12$

$\frac{2 \text{ rise}}{1 \text{ run}}$

Perpendicular : cross at 90° angles
right angles



$y = \frac{3}{2}x - 5$

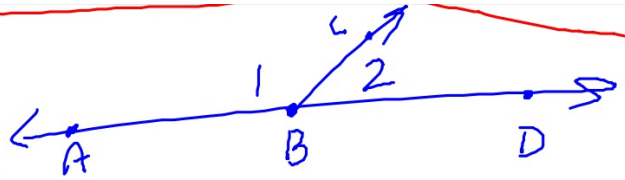
$y = \frac{2}{3}x - 2$

parallel, perpendicular, neither

parallel → Same Slope ✗

perpendicular → ✗ opposite ✓ reciprocal

Linear Pair



$\angle 1 + \angle 2 = 180^\circ$

Vertical Angles

Complementary Angles

Supplementary Angles.

Vertical angles

$\angle 1 + \angle 2 + \angle 3 + \angle 4 = 360^\circ$