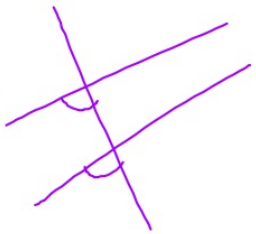
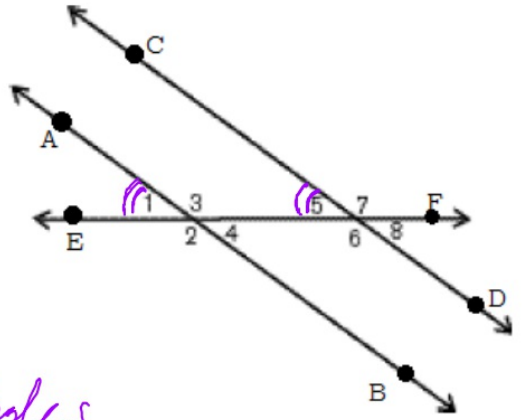
Journal 9/15

Stephen is not sure how to finish his proof. Copy down the proof and diagram into your journals and fill in the missing pieces.





Given: ∠1=40° and ∠7 = 140°

Prove: AB // CD

Statements	*Reasons*
1. $\angle 1 = 40°$ and $\angle 7 = 140°$	1. Given
2. $\angle 7 + \angle 5 = 180°$	2. Supplementary Angles
3. $140° + \angle 5 = 180°$	3. Substitution
4. $\angle 5 = 40°$	4. Subtraction
5. $\angle 1 \cong \angle 5$	5. Congruence Def.; Substitution
6. $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$	6. Converse of Corresponding Angles Postulate

Activating Prior Knowledge

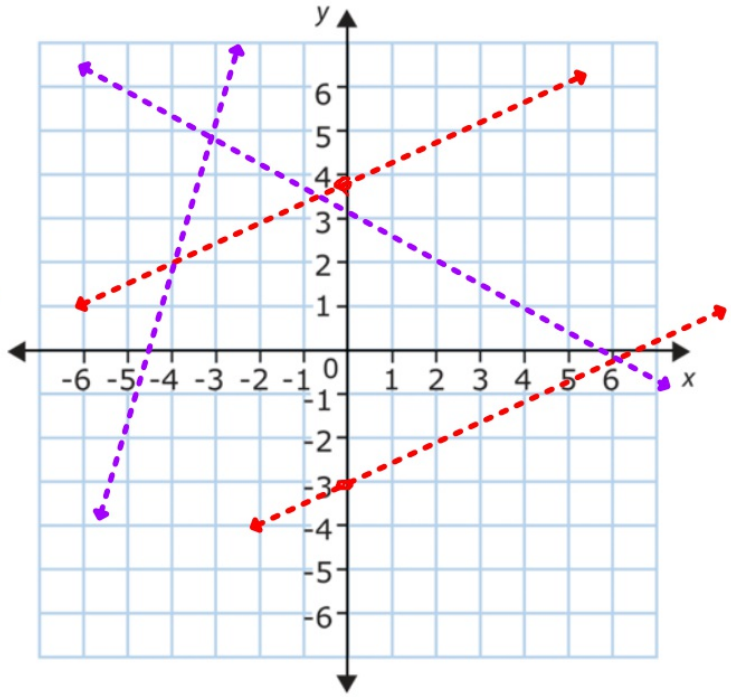
3.5 = 3.5

What does it mean numerically for two lines in the coordinate plane to be parallel?

never cross — Same — slopes; identical slopes, diff. y-int.

What does it mean numerically for two lines in the coordinate plane to not be parallel?

Different Slopes



Video Homework Review p. 89

pick a point.

Write the equation of the line that passes through the points (4, -3) and (-2, 6). Give your answer in point-slope and slope-intercept form.

- $m = \frac{y_2 - y_1}{x_2 - x_1}$ $\quad \frac{6 - -3}{-2 - 4} \quad \frac{9}{-6} = -\frac{3}{2}$

POINT-SLOPE

- $y - y_1 = m(x - x_1)$ $\longrightarrow$ $y - -3 = -\frac{3}{2}(x - 4)$

SLOPE-INTERCEPT ("y-int")

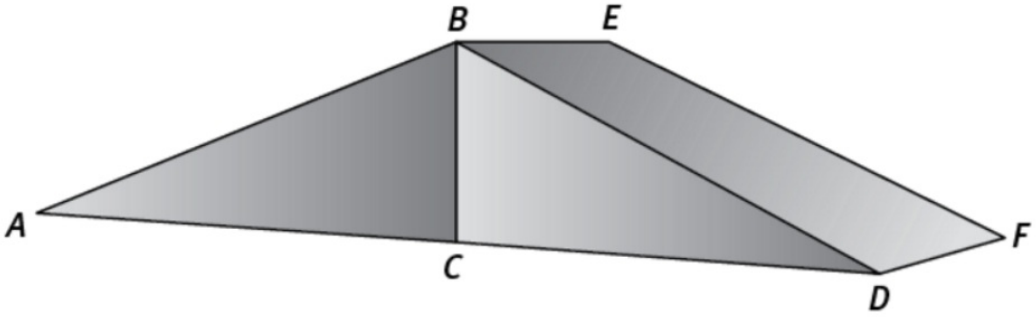
- $y = mx + b$

$y + 3 = -\frac{3}{2}(x - 4)$ (pt-slope)

$y + 3 = -\frac{3}{2}x + 6$ } Solve for y.

$\boxed{y = -\frac{3}{2}x + 3}$ Slope-Int

Skateboard Geometry p. 89

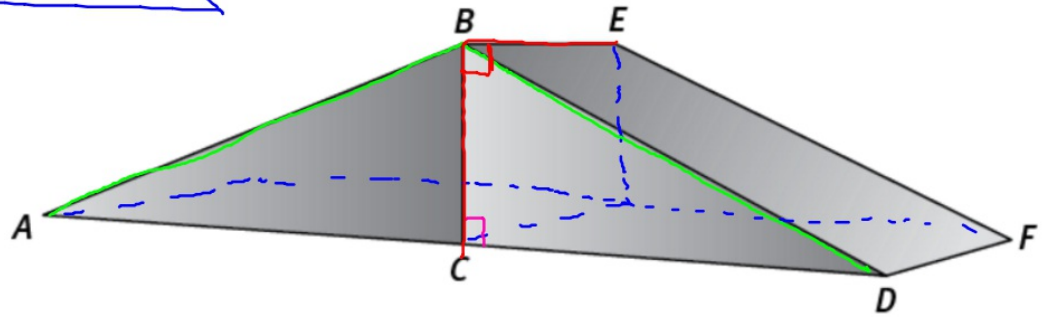


1. Use the diagram of the ramp to complete the chart below:

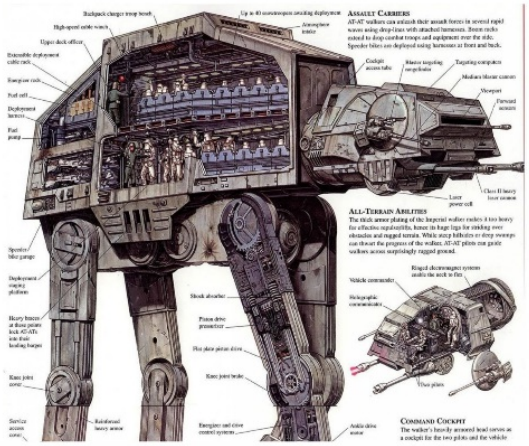
Describe two parts of the ramp that appear to be parallel.	$\overline{BD} \parallel \overline{EF}$ $\overline{BE} \parallel \overline{DF}$
Describe two parts of the ramp that appear to be perpendicular.	$\overline{BC} \perp \overleftrightarrow{CD}$ or $\overrightarrow{AD}$
Describe two parts of the ramp that appear to be neither parallel nor perpendicular.	

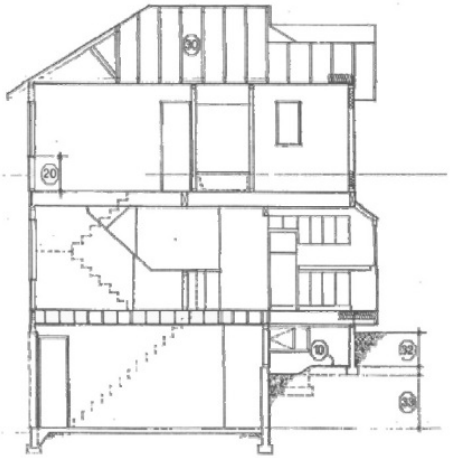
//

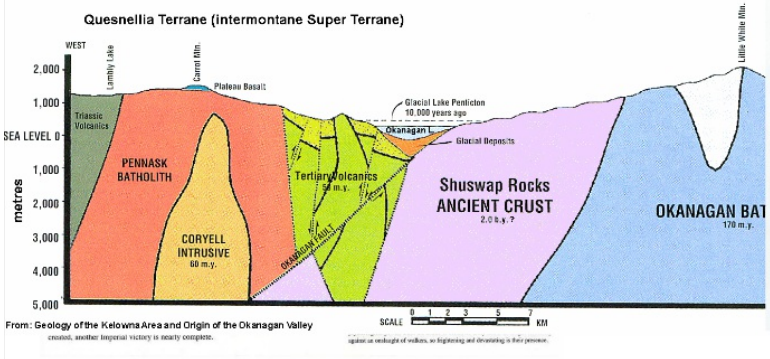
Cross at 90°

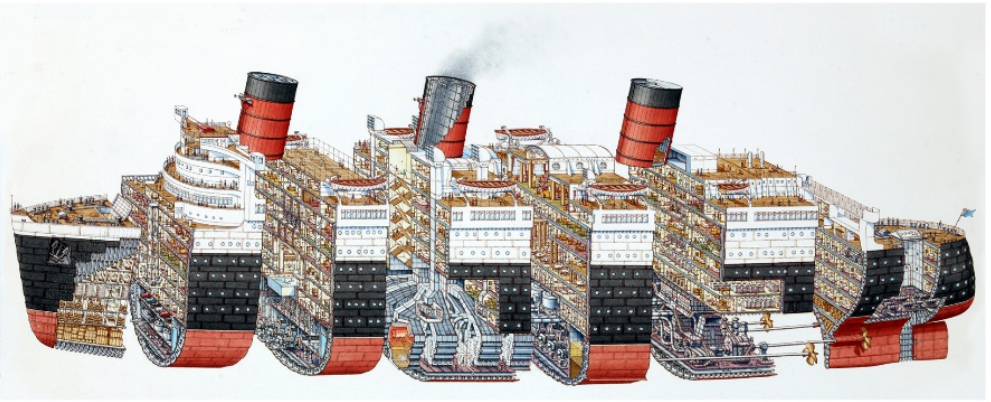


Cross Section









p. 90: 3a and b

$M = \frac{y_2 - y_1}{x_2 - x_1}$

Think-Pair-Share

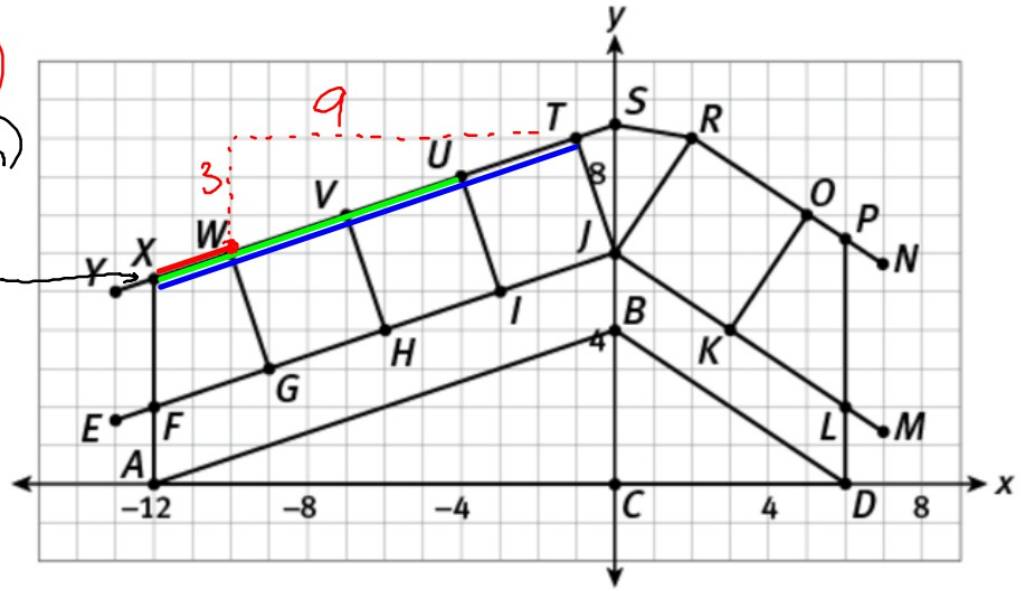
- Elbow Partners

$\frac{3}{9}$ (Collinear)

Slope of XW $\frac{1}{3}$

Slope of XU $\frac{1}{3}$

Slope of XT $\frac{1}{3}$

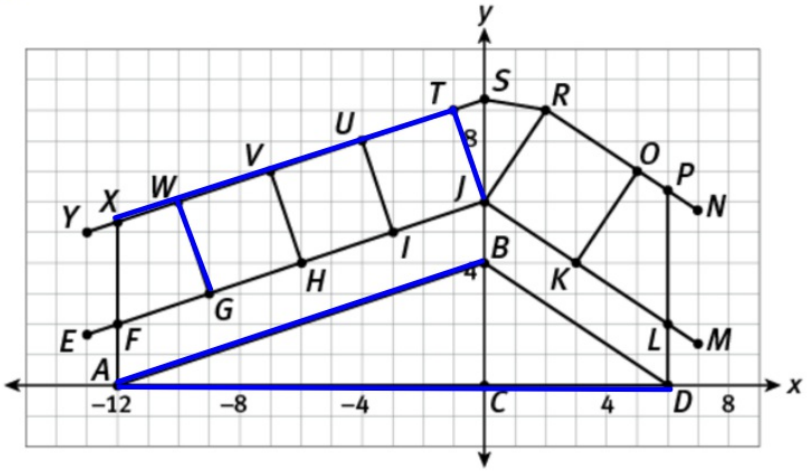


X (-12, 5ish)

p90 #4 and 5

$m = \frac{y_2 - y_1}{x_2 - x_1}$

Find the slopes of the segments indicated with your elbow partner.



Then complete the chart.

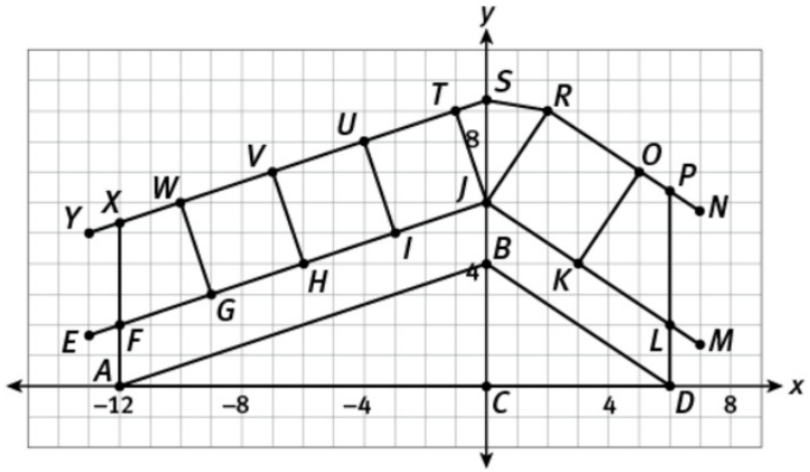
$\overline{XT} = 1/3$ $\overline{AB} = \frac{1}{3}$

$\overline{WG} = -3$ $\overline{TJ} = -3$

$\overline{AD} = \frac{0}{18} = 0$

Symbols: ∥ and ⊥

Segments	Parallel, Perpendicular, or Neither?	Slopes
$\overline{AB}$ and $\overline{XT}$	$\overline{AB} \parallel \overline{XT}$	$\frac{1}{3}, \frac{1}{3}$
$\overline{WG}$ and $\overline{TJ}$	$\overline{WG} \parallel \overline{TJ}$	$-3, -3$
$\overline{XT}$ and $\overline{WG}$	$\overline{XT} \perp \overline{WG}$	$\frac{1}{3}, -3$
$\overline{XT}$ and $\overline{TJ}$	1	$\frac{1}{3}, -3$
$\overline{AB}$ and $\overline{AD}$	neither	
$\overline{WG}$ and $\overline{AD}$	neither	



"opposite reciprocal"

$$\frac{a}{b} \Rightarrow -\frac{b}{a}$$

Conjectures:

If two lines with slopes m and n are parallel, then ....

$m = n$

If parallel $\Rightarrow$ same slopes

If same slopes $\Rightarrow$ parallel

If two lines with slopes a and b are perpendicular, then....

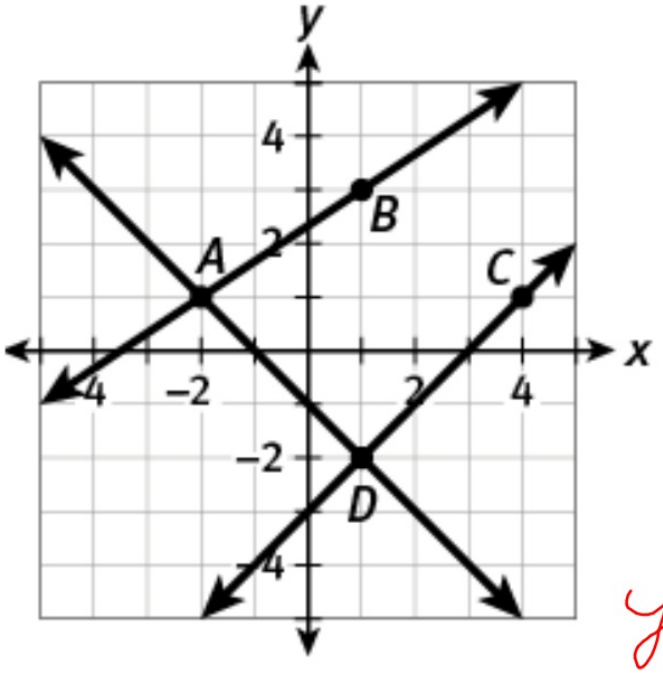
$a = \frac{-1}{b}$ ← "opposite reciprocal"

OR

$a \cdot b = -1$

ex $\frac{1}{3} \cdot -3 = -1$

Practice: p. 91 #10-12



Justify your answers numerically

Is $\overleftrightarrow{AB} \parallel \overleftrightarrow{DC}$?

No

$\frac{2}{3} \neq \frac{3}{3} = 1$

Is $\overleftrightarrow{AB} \perp \overleftrightarrow{AD}$?

No

$\frac{2}{3}$ -1

$\frac{2}{3} \cdot -1 = -\frac{2}{3} \neq -1$

Is $\overleftrightarrow{DC} \perp \overleftrightarrow{AD}$?

Yes

$\frac{3}{3} = 1$ $\quad -\frac{3}{3} = -1$

$1 \cdot -1 = -1$

Homework: p. 97
#3-10
#13-15
(GPE-B5a)

Resources/Help Videos on http://mgeo.weebly.com