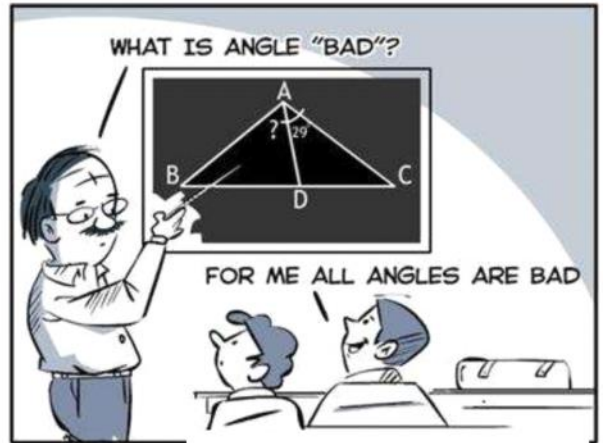
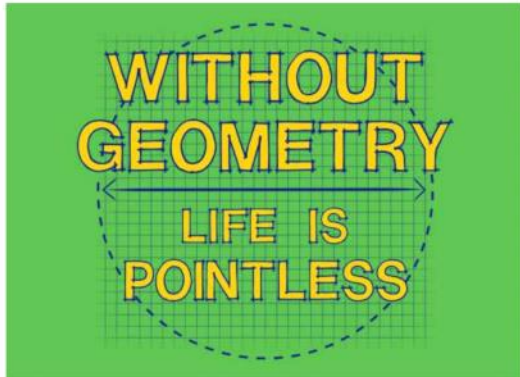


3 Angles formed by Parallel Lines

October 4, 2020 5:08 PM

FOM 11: Ch 2 Geometry

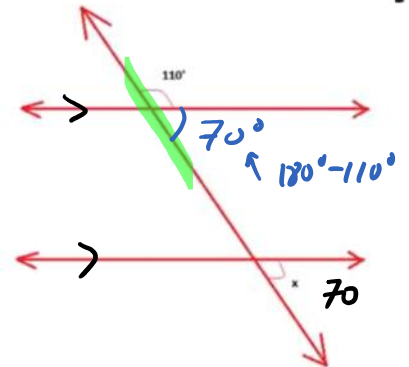
Day 3: Angles Formed by Parallel Lines



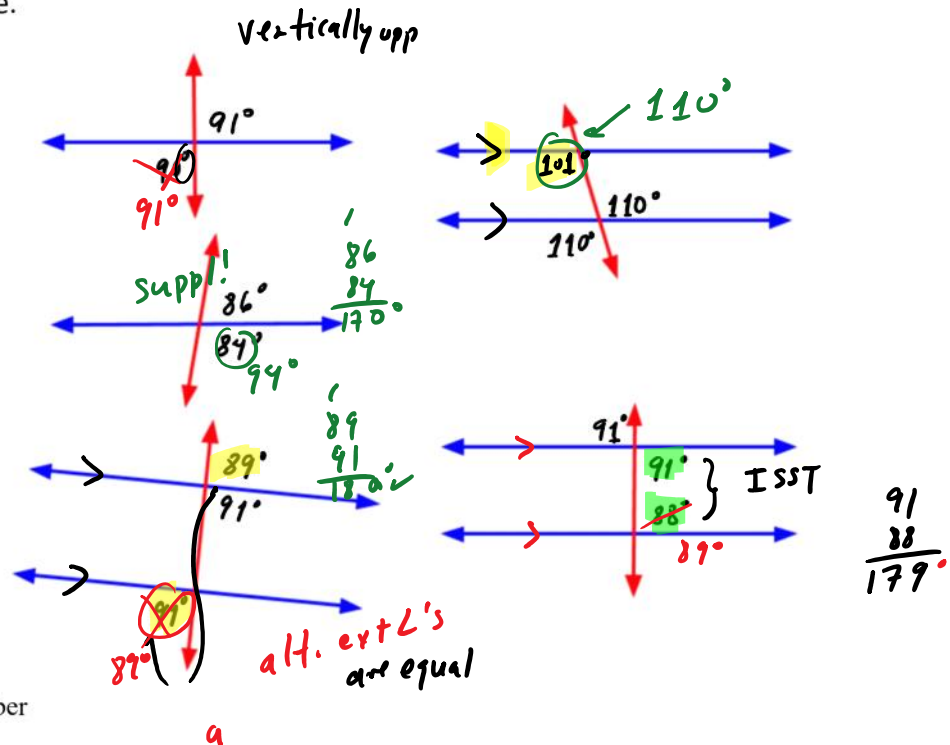
Recall:

If two lines are parallel, then:

- Corresponding angles are equal
- Alternate interior angles are equal
- Alternate exterior angles are equal
- Interior angles on the same side of the transversal are supplementary (ISST)

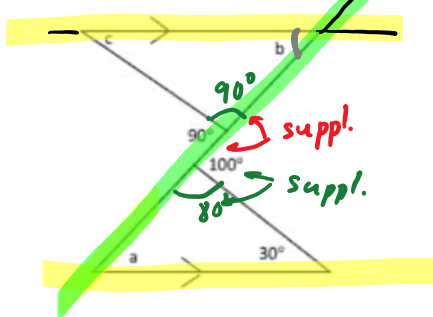


Example 1: You be the teacher! All of these examples have errors. Find all the errors. Correct and explain each one.



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Example 2: Determine the measures of a , b , and c . For each, state the reason.



$$\angle a = 180^\circ - 80^\circ - 30^\circ = 70^\circ$$

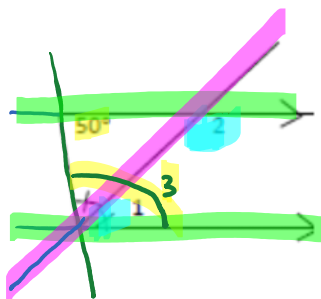
$$\angle b = 70^\circ$$

$$\angle c = 180^\circ - 90^\circ - 70^\circ = 20^\circ$$

Reason

alt. int. to $\angle a$ 

Example 3: Determine the measures of angles 1 and 2. For each, state the reason.



$$\angle 3 = 180^\circ - 50^\circ = 130^\circ$$

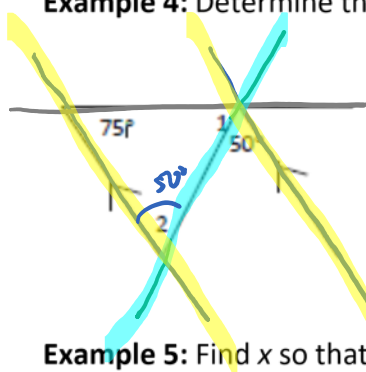
$$\angle 1 = \frac{130^\circ}{2} = 65^\circ$$

$$\angle 2 = 180^\circ - 65^\circ = 115^\circ$$

Reason

ISST to $\angle 3$ half of \angle ISST to $\angle 1$

Example 4: Determine the measures of angles 1 and 2. For each, state the reason.



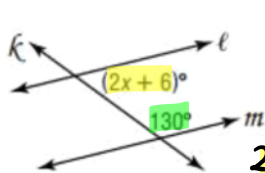
$$\angle 1 = 180^\circ - 75^\circ - 50^\circ = 55^\circ$$

$$\angle 2 = 50^\circ$$

Reason

alt. int. to $\angle 50^\circ$

Example 5: Find x so that $\ell \parallel m$



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ISST add up to 180

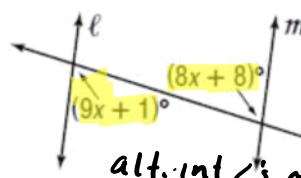
$$2x + 6 + 130 = 180$$

$$2x + 136 = 180$$

$$\begin{array}{r} 2x + 136 = 180 \\ -136 \quad -136 \\ \hline 2x = 44 \end{array}$$

$$\boxed{x = 22^\circ}$$

Example 6: Find x so that $\ell \parallel m$



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alt. int. \angle s are equal

$$9x + 1 = 8x + 8$$

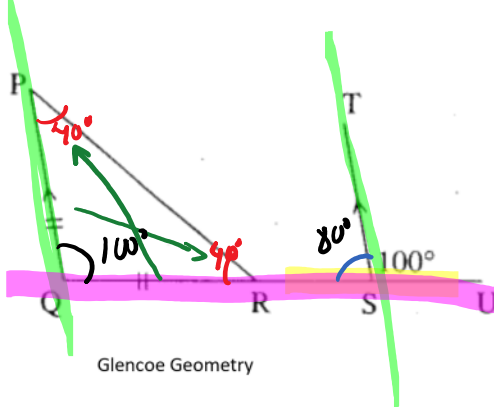
$$\begin{array}{r} 9x + 1 = 8x + 8 \\ -8x \quad -8x \\ \hline x + 1 = 8 \end{array}$$

$$\begin{array}{r} x + 1 = 8 \\ -1 \quad -1 \\ \hline x = 7 \end{array}$$

Reason

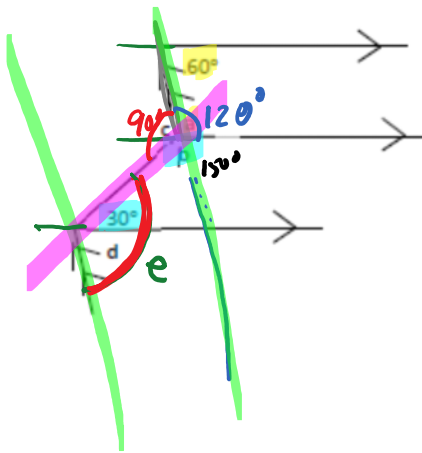
Example 7: Determine the measures of a , b , and c . For each, state the reason.

Example 7: Determine the measures of $\angle P$, $\angle Q$ and $\angle R$. For each, state the reason.



	Reason
$\angle RST = 180^\circ - 100^\circ = 80^\circ$	Suppl. \angle 's
$\angle Q = 100^\circ$	Corr. to $\angle TSU$
$\angle P = 180^\circ - 100^\circ = 80^\circ$ $80^\circ \div 2 = 40^\circ$	$\triangle PQR$ isosceles Δ
$\angle R = 40^\circ$	isosceles Δ

Example 8: Determine the measures of a , b , c and d . For each, state the reason.



	Reason
$\angle a = 180^\circ - 60^\circ = 120^\circ$	ISST are suppl.
$\angle b = 180^\circ - 30^\circ = 150^\circ$	ISST are suppl.
$\angle c = 360^\circ - \angle a - \angle b$ $360 - 120^\circ - 150^\circ = 90^\circ$	\angle 's at a point = 360°
$\angle d = \angle e - 30^\circ = 60^\circ$	\angle addition
$\angle e = 90^\circ$	alt. int. to $\angle c$

Assignment:

- Parallel Lines Worksheet

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