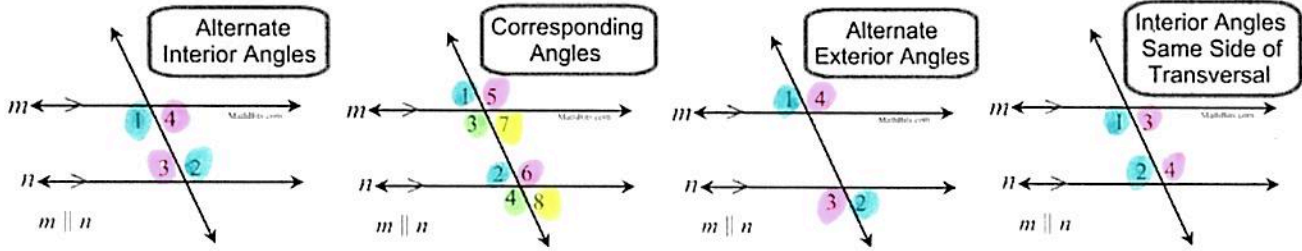


UNIT 1B

LESSON 15

AIM: WHAT IS THE RELATIONSHIP BETWEEN TRANSVERSALS AND PARALLEL LINES? (DAY 2)



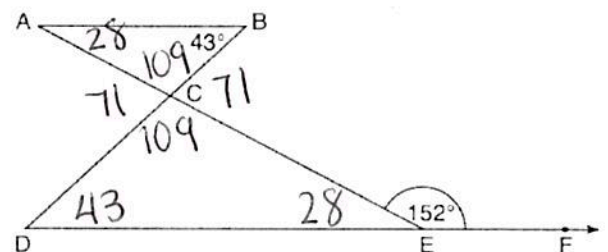
Do Now:

<p>1. Transversal \overleftrightarrow{EF} intersects \overleftrightarrow{AB} and \overleftrightarrow{CD}, as shown in the diagram below.</p> <p>only alt. int/ext, corresponding + Which statement could always be used to prove $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$? same side int</p> <p>1) $\angle 2 \cong \angle 4$ vertical #'s</p> <p>2) $\angle 7 \cong \angle 8$</p> <p>3) $\angle 3$ and $\angle 6$ are supplementary same side int.</p> <p>4) $\angle 1$ and $\angle 5$ are supplementary congruent</p>	<p>2. Based on the diagram below, which statement is true?</p> <p>1) $a \parallel b$</p> <p>2) $a \parallel c$</p> <p>3) $b \parallel c$</p> <p>4) $d \parallel e$</p>
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EXTRA PRACTICE:

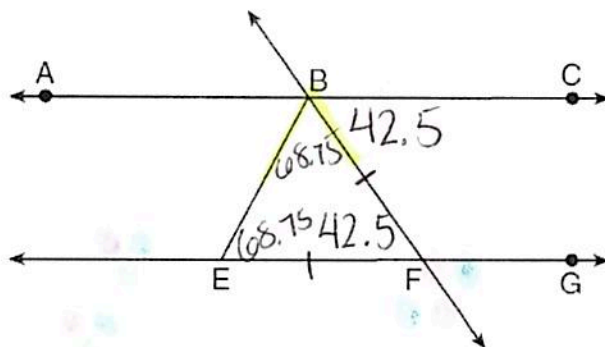
1. In the diagram below, $\overleftrightarrow{AB} \parallel \overleftrightarrow{DE}$, \overleftrightarrow{AE} and \overleftrightarrow{BD} intersect at C, $m\angle B = 43^\circ$, and $m\angle CEF = 152^\circ$. Which statement is true?

- 1) $m\angle D = 28^\circ$
- 2) $m\angle A = 43^\circ$
- 3) $m\angle ACD = 71^\circ$
- 4) $m\angle BCE = 109^\circ$



2. As shown in the diagram below, $\overleftrightarrow{ABC} \parallel \overleftrightarrow{EFG}$ and $\overline{BF} \cong \overline{EF}$.
If $m\angle CBF = 42.5^\circ$, then $m\angle EBF$ is

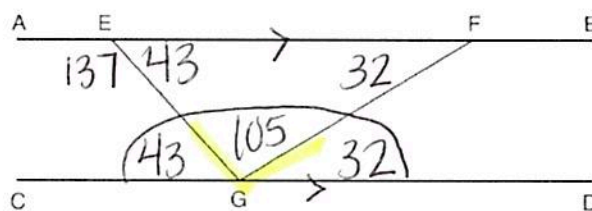
- 1) 42.5°
 2) 68.75°
 3) 95°
 4) 137.5°



$$\frac{180 - 42.5}{2} = 68.75$$

3. In the diagram below, $\overleftrightarrow{AEFB} \parallel \overleftrightarrow{CGD}$, and \overline{GE} and \overline{GF} are drawn.
If $m\angle EFG = 32^\circ$ and $m\angle AEG = 137^\circ$, what is $m\angle EGF$?

- 1) 11°
 2) 43°
 3) 75°
 4) 105°



$$180 - 43 - 32 = 105$$

4. In the diagram below, \overleftrightarrow{EF} intersects \overleftrightarrow{AB} and \overleftrightarrow{CD} at G and H, respectively, and \overline{GI} is drawn such that $\overline{GH} \cong \overline{IH}$.
If $m\angle EGB = 50^\circ$ and $m\angle DIG = 115^\circ$, explain why $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$.

- since linear pairs are supplementary,

$\angle HIG = 65^\circ$. $\overline{GH} \cong \overline{IH}$ so $\triangle HIG$

is an isosceles \triangle making

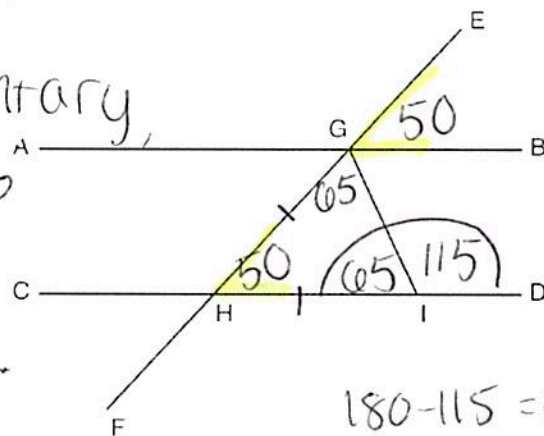
$\angle HGI = 65^\circ$ b/c base \angle 's are \cong .

$\angle GHI = 50^\circ$ b/c \angle 's in a \triangle sum

to 180° . Therefore, $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$

because $\angle EGB \cong \angle GHD$ making

corresponding \angle 's \cong



$$180 - 115 = 65$$

$$180 - 65 - 65 = 50$$