# Warmup 2 / (The measure of an angle that is vertical to a $6^{\circ}$ angle) Created by Mr.Lischwe 

Put the values in order from least to greatest. Show at least a little work for each value.
A: $\frac{2}{5}$
B. $\frac{3}{7}$
C. $\frac{4}{9}$
D. $\frac{3}{8}$
E. $\frac{32}{100}$
***Please make sure your desk has ONE whiteboard, ONE marker, and ONE eraser inside. If it has more than that, put the extras back!***

COLLECT BROWN ANGLE BASICS WORKSHEET (MAKE SURE THERE IS A SCORE!)

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## Angles formed by Parallel Lines

## Objectives:

- Given one angle measure, find ALL angles formed by 2 parallel lines
- Identify special angle pairs
- Use special angle pair rules to find angle measures
- Two angles that are in the same "position" but on different lines are called corresponding.

- If the lines are parallel, these angles will be congruent!!!


## COPY the diagram!!!!

- One angle measure is given. Find the measures of ALL other angles.


$$
\begin{gathered}
m \angle 1=145^{\circ} \\
m \angle 2=35^{\circ} \\
m \angle 3=145^{\circ} \\
m \angle 4=145^{\circ} \\
m \angle 5=35^{\circ} \\
m \angle 6=35^{\circ} \\
m \angle 7=145^{\circ}
\end{gathered}
$$

- One angle measure is given. On your whiteboard, find the measures of ALL other angles.


$$
\begin{aligned}
& m \angle 1=\mathbf{8 2}^{\circ} \\
& m \angle 2=\mathbf{9 8}^{\circ} \\
& m \angle 3=\mathbf{8 2}^{\circ} \\
& m \angle 4=\mathbf{9 8}^{\circ} \\
& m \angle 5=\mathbf{9 8}^{\circ} \\
& m \angle 6=\mathbf{8 2}^{\circ} \\
& m \angle 7=\mathbf{8 2}^{\circ}
\end{aligned}
$$

## New terminology

- Which angles would you say are interior angles?
- Which angles would you say are exterior angles?



## Copy into binder (with diagram):

- Alternate Interior: $\angle 4$ and $\angle 5, \angle 3$ and $\angle 6$
- Same-side Interior: $\angle 3$ and $\angle 5, \angle 4$ and $\angle 6$
- Alternate Exterior: $\angle 1$ and $\angle 8, \angle 2$ and $\angle 7$
- Corresponding: $\angle 1$ and $\angle 5, \angle 2$ and $\angle 6, \angle 3$ and $\angle 7, \angle 4$ and $\angle 8$


## Hints to help remember:

- Alternate Interior Angles: Form a "Z"
- Same-side interior: Form a "C" or "U"
- Alternate Exterior: Sort of like vertical angles, but separated more
- Corresponding Angles:

The ones in "matching"
 positions. Bottom left $\rightarrow$ bottom left

## Which type of angle?



## Which type of angle?



## Which type of angle?



## Vertical

## Which type of angle?



## Which type of angle?



## Which type of angle?



## Which type of angle?



## Which type of angle?



## Alternate Interior

## Which type of angle?



## Which type of angle?



## Which type of angle?



Alternate
Interior

## Which type of angle?

## Corresponding



## Which type of angle?

## Same-side interior



## Which type of angle? Corresponding



## Find the given angle measure.



## Find the given angle measure.



- If the lines are parallel, alternate interior angles will always be congruent to each other!


## INYOUR BINDER:

## - WHEN THE LINES ARE PARALLEL:

- Alternate Interior: congruent
- (Leave 3 more lines)
$\circ$

0

## Find the given angle measure.



## Find the given angle measure.

## INYOUR BINDER:

## - WHEN THE LINES ARE PARALLEL:

- Alternate Interior: congruent
- Alternate Exterior: congruent

○

0

## Find the given angle measure.



## Find the given angle measure.



## INYOUR BINDER:

## - WHEN THE LINES ARE PARALLEL:

- Alternate Interior: congruent
- Alternate Exterior: congruent
- Same-Side Interior: supplementary

0

- Remember, if the lines are parallel, corresponding angles are congruent.



## INYOUR BINDER:

## - WHEN THE LINES ARE PARALLEL:

- Alternate Interior: congruent
- Alternate Exterior: congruent
- Same-side Interior: supplementary
- Corresponding: congruent


## Whiteboards

If the measure of angle $I$ is 30 degrees, what is the measure of angle 2? HOW DOYOU KNOW?


## $m \angle 2=30^{\circ}$; they are alternate

 exterior
## Whiteboards

If the measure of angle $I$ is 45 degrees, what is the measure of angle 2? HOW DO YOU KNOW?


$$
\begin{gathered}
m \angle 2=135^{\circ} \text {; they } \\
\text { are same-side }
\end{gathered}
$$ interior

## Whiteboards

If the measure of angle $I$ is 25 degrees, what is the measure of angle 2? HOW DOYOU KNOW?


## Whiteboards

If the measure of angle I is 115 degrees, what is the measure of angle 2? HOW DOYOU KNOW? $m \angle 2=115^{\circ}$; they


## Whiteboards

If the measure of angle I is 107 degrees, what is the measure of angle 2? HOW DO YOU KNOW?


## Whiteboards

If the measure of angle $I$ is $4 I$ degrees, what is the measure of angle 2? HOW DOYOU KNOW?


## Whiteboards

If the measure of angle $I$ is $4 I$ degrees, what is the measure of angle 2? HOW DOYOU KNOW?


## Extra one...

If the measure of angle $I$ is 40 degrees, what is the measure of angle 2? HOW DO YOU KNOW?


$$
\begin{aligned}
& m \angle 2=140^{\circ} \text {; } \\
& \text { angle } 3 \text { is } 40 \\
& \text { degrees because } \\
& \text { it corresponds to } \\
& \text { angle } I \text {; angle } 2 \text { is } \\
& \text { supplementary } \\
& \text { with angle } 3
\end{aligned}
$$

## HOMEWORK

- Parallel Lines WS

