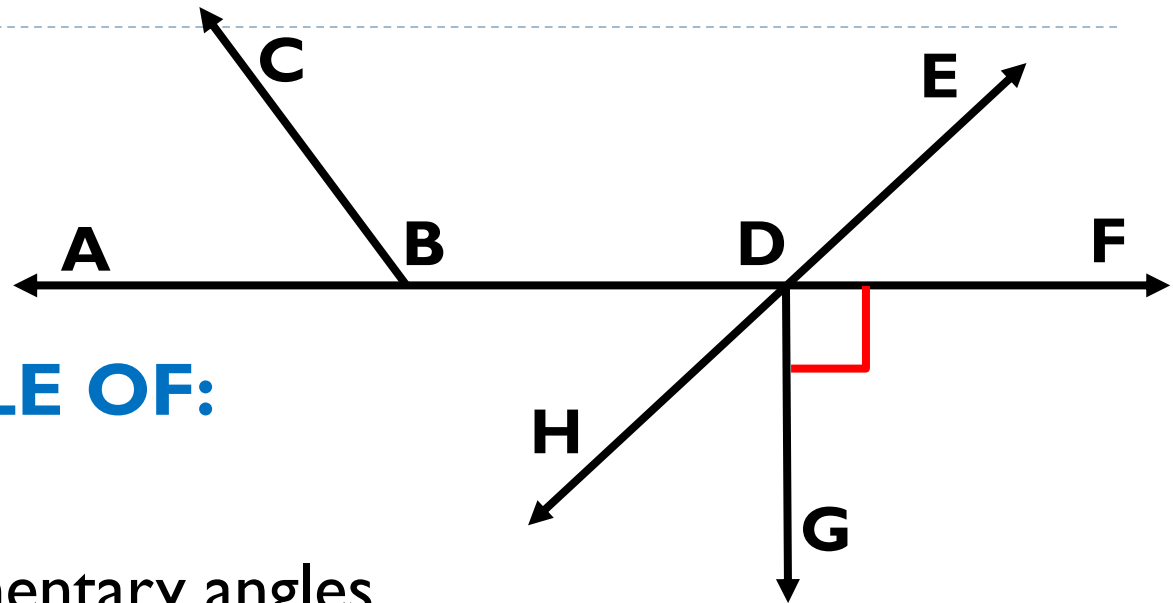# Warmup 2**/(# of sides on a heptagon)**

GIVE AN EXAMPLE OF:

1. An obtuse angle
2. A pair of supplementary angles
3. A pair of vertical angles
4. A pair of complementary angles
5. $\angle HDG$ and $\angle GDE$ are:

   A) Complementary   B) Supplementary   C) Vertical   D) None of these

6. $\angle HDG$ and $\angle EDF$ are:

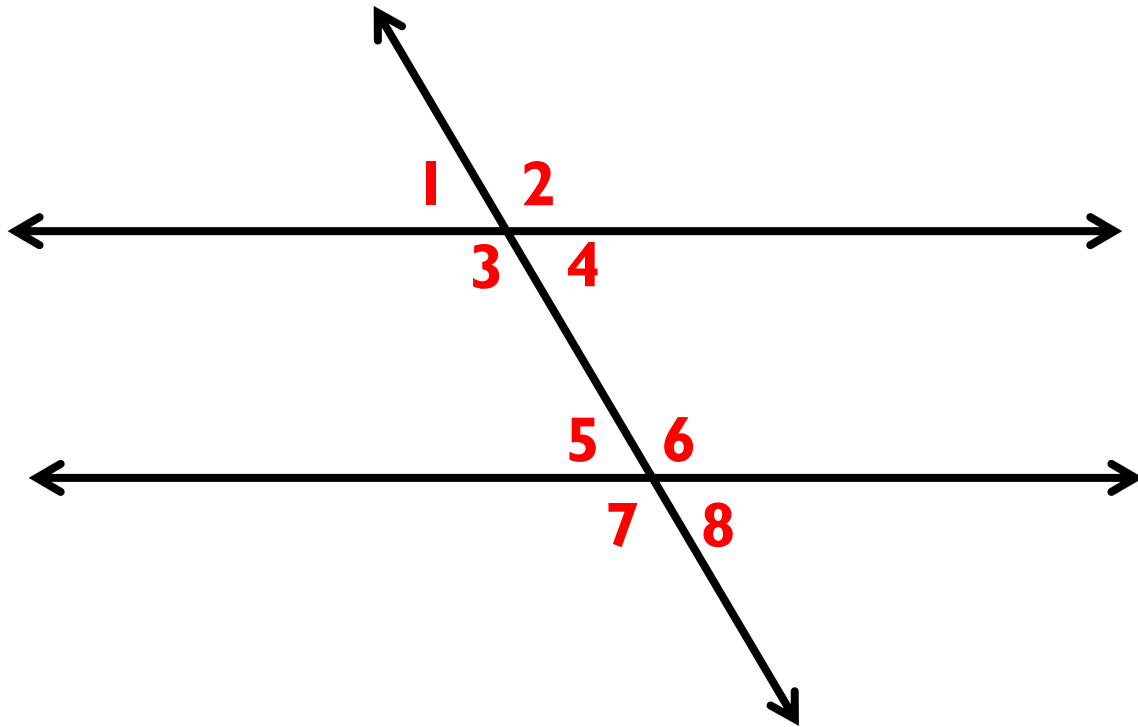   ▸ A) Complementary   B) Supplementary   C) Vertical   D) None of these

Table of Contents (2ⁿᵈ Semester)
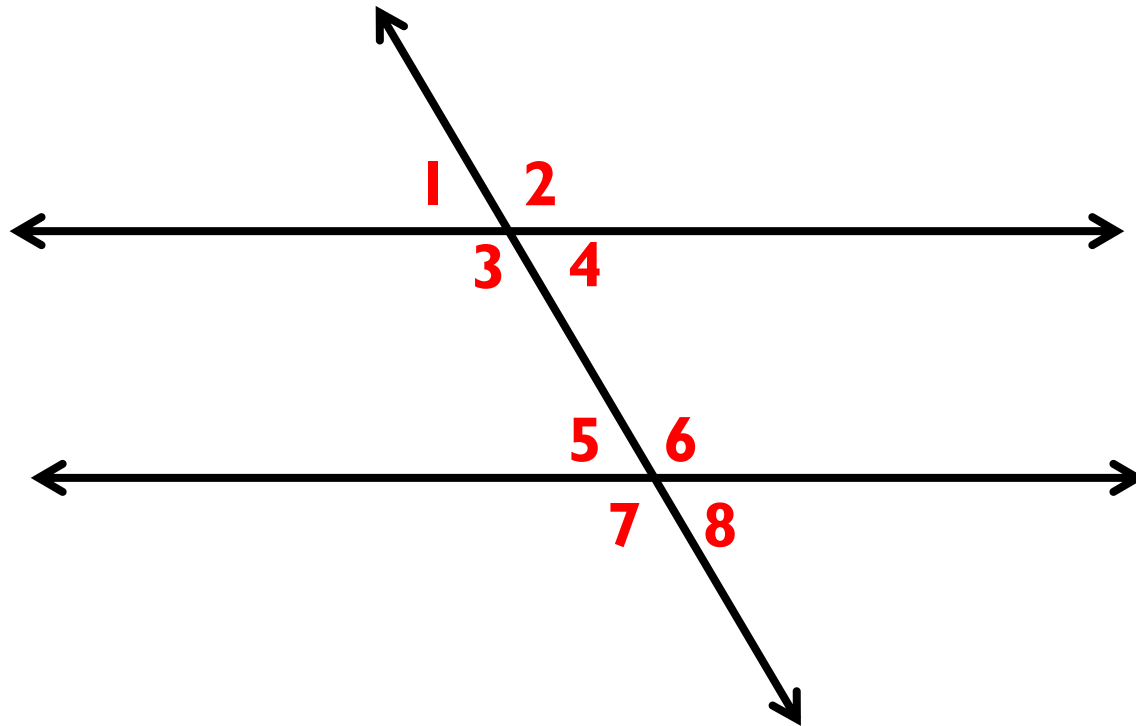
BACK TO THIS PAGE

Refresher

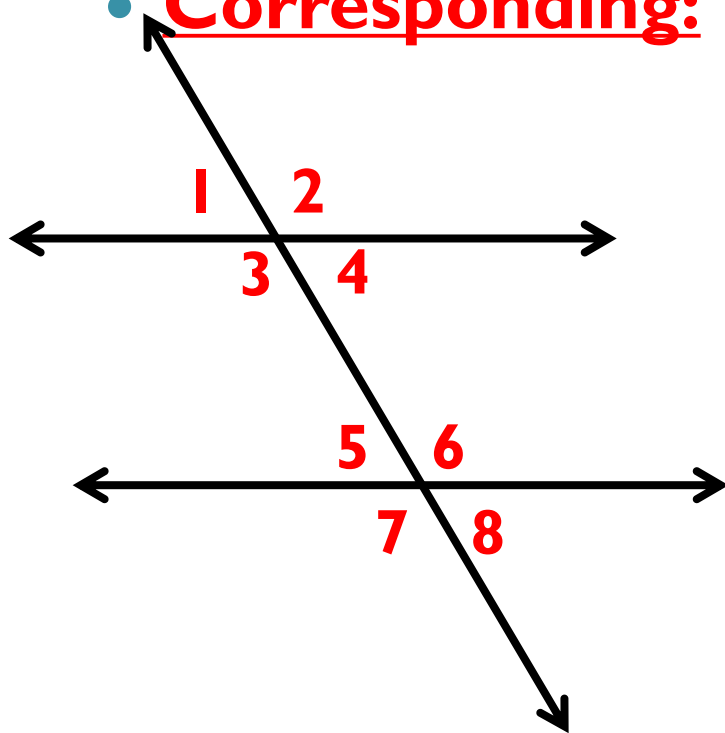- Give one of the angles, how can I find the rest?

New terminology

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

Copy into binder (with diagram):

- **<u>Alternate Interior:</u>** ∠4 and ∠5, ∠3 and ∠6
- **<u>Same-side Interior:</u>** ∠3 and ∠5, ∠4 and ∠6
- **<u>Alternate Exterior:</u>** ∠1 and ∠8, ∠2 and ∠7
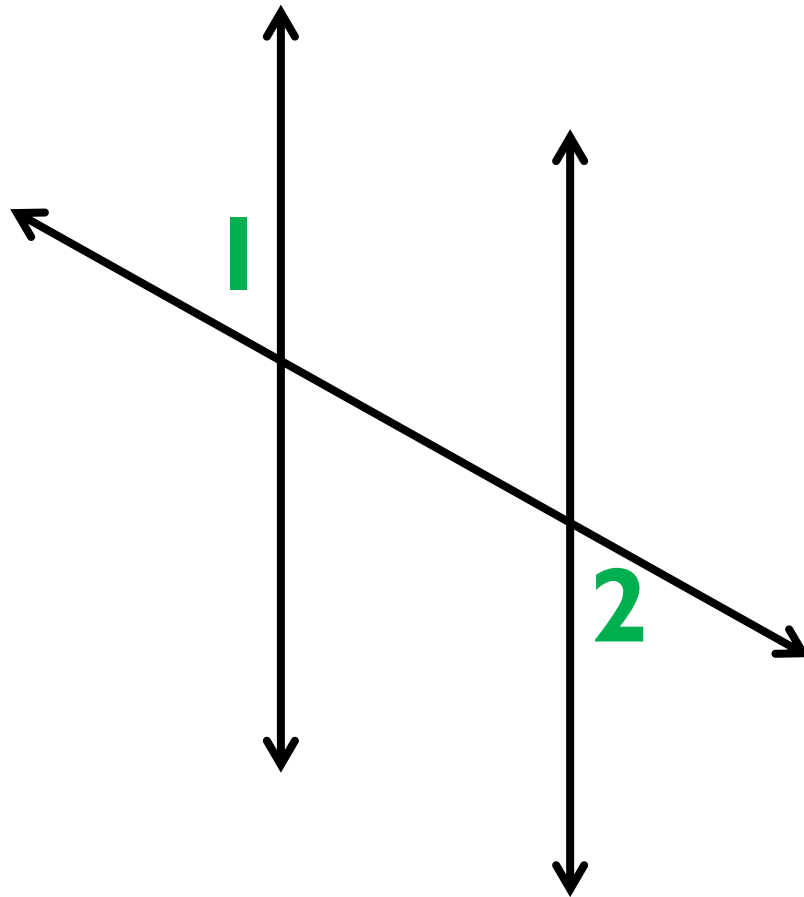- **<u>Corresponding:</u>** ∠1 and ∠5, ∠2 and ∠6, ∠3 and ∠7, ∠4 and ∠8

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**

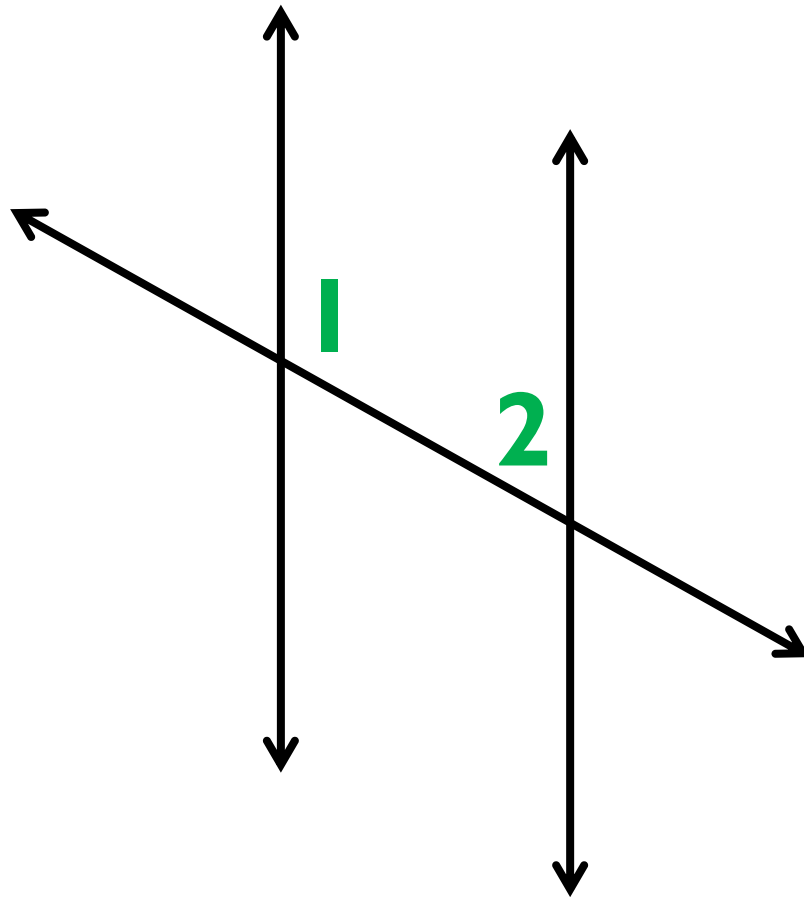- **Corresponding Angles: The ones in "matching" positions. Bottom left → bottom left**
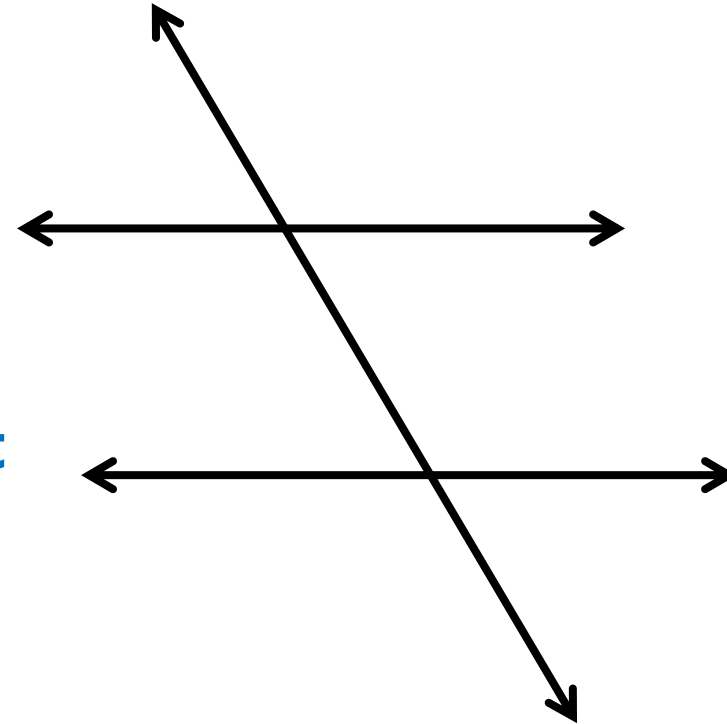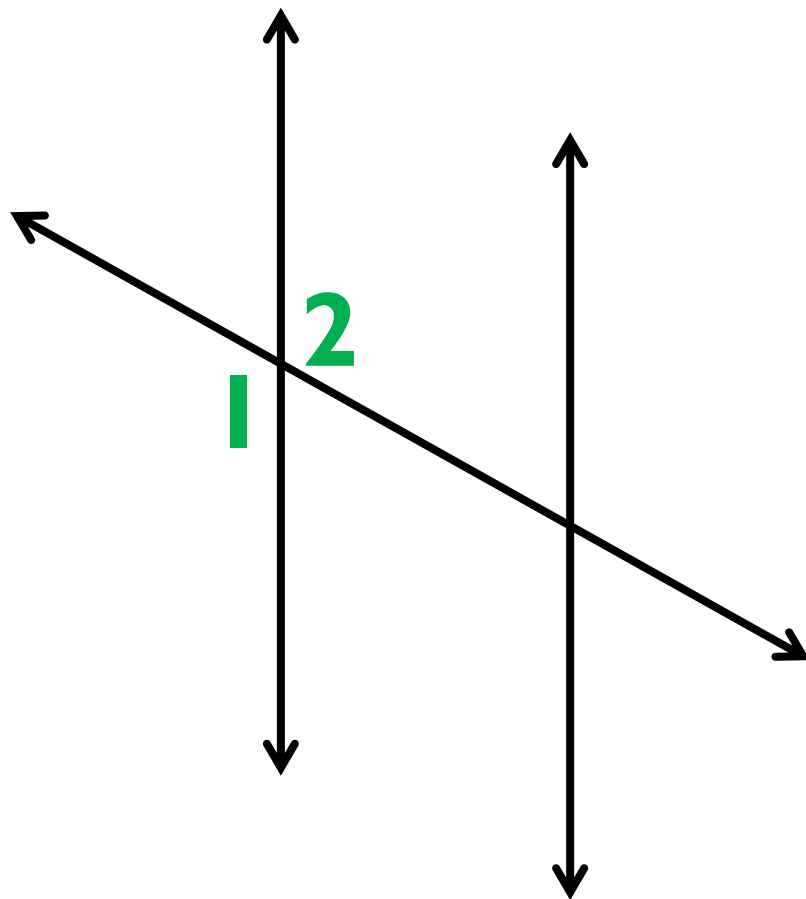
Which type of angle?

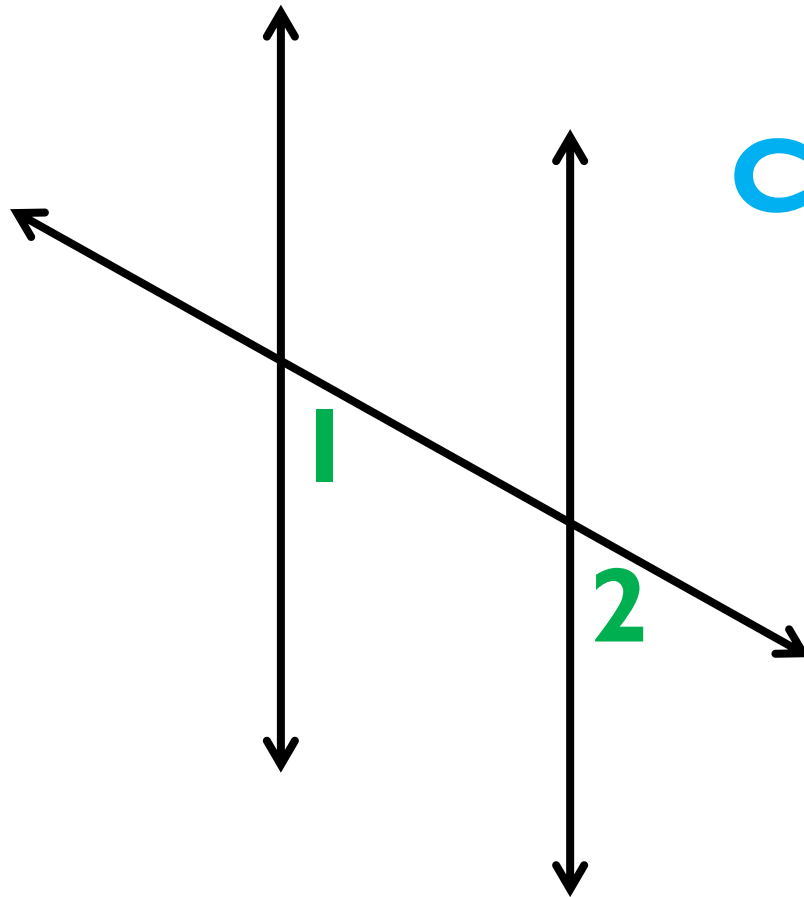**Alternate Exterior**

Which type of angle?

1

2

Same-side Interior

Which type of angle?

1   **2**

Vertical

Which type of angle?

Corresponding

1

2

Which type of angle?

Alternate Interior

1

2

Which type of angle?

1

2

Same-side interior

Which type of angle?

Corresponding

1

2

Which type of angle?

Alternate Interior

1

2

Which type of angle?

Vertical

1

2

Which type of angle?

1 2
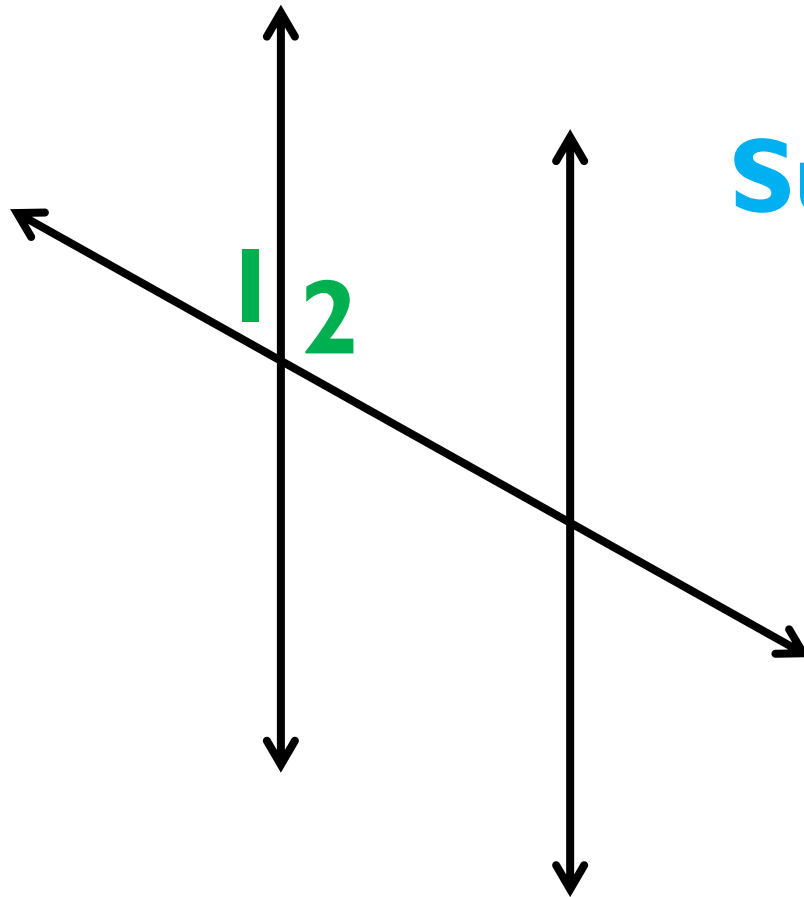
Supplementary
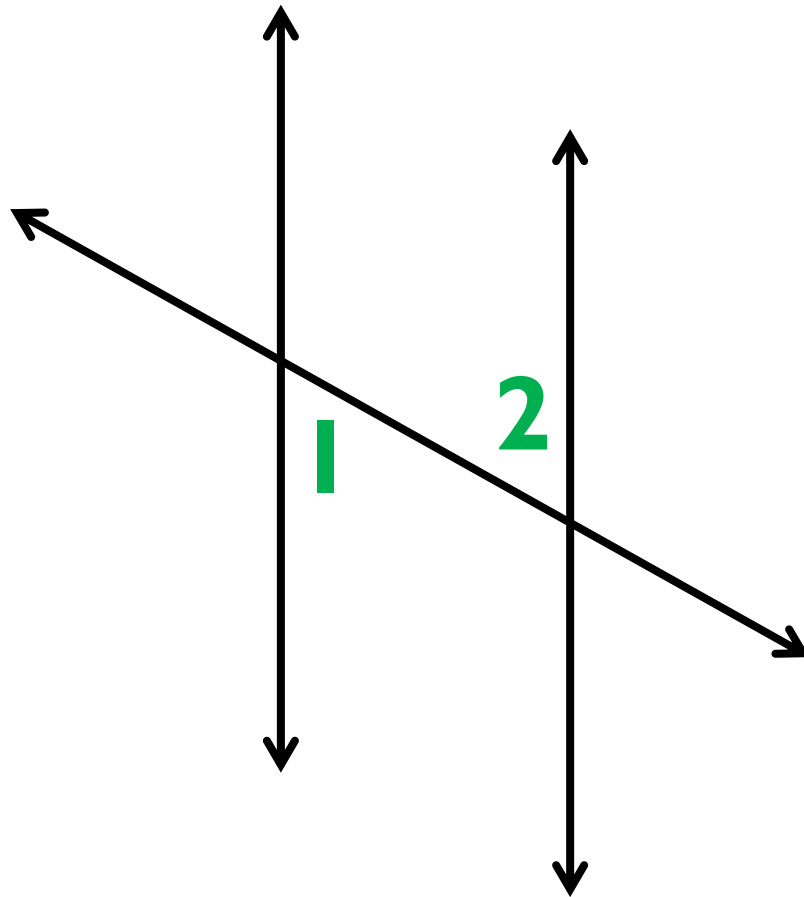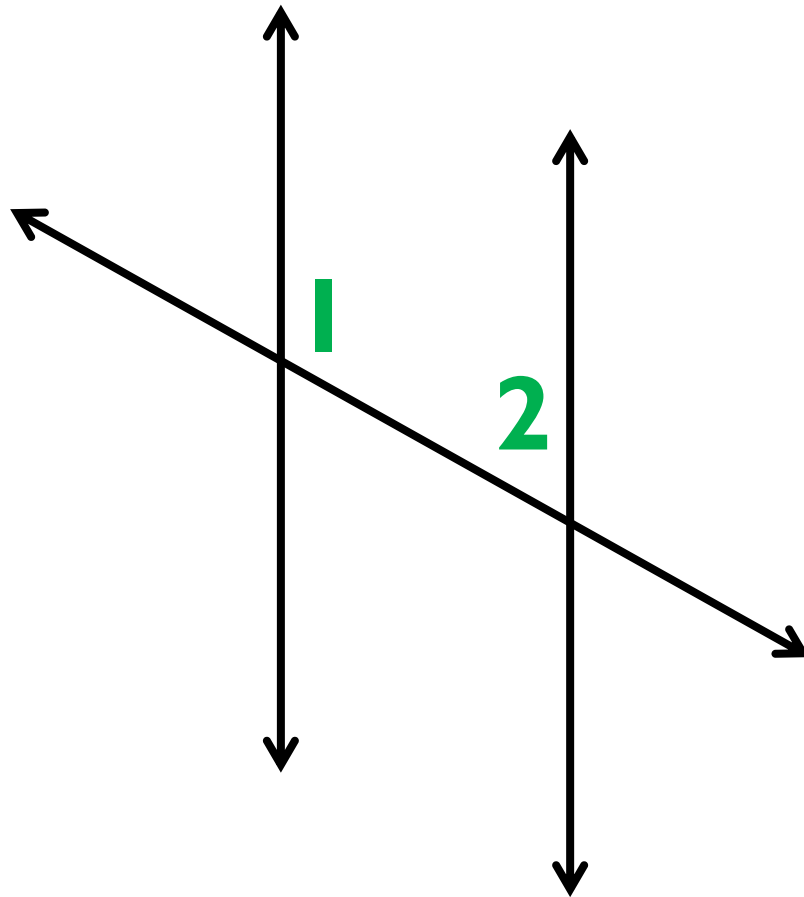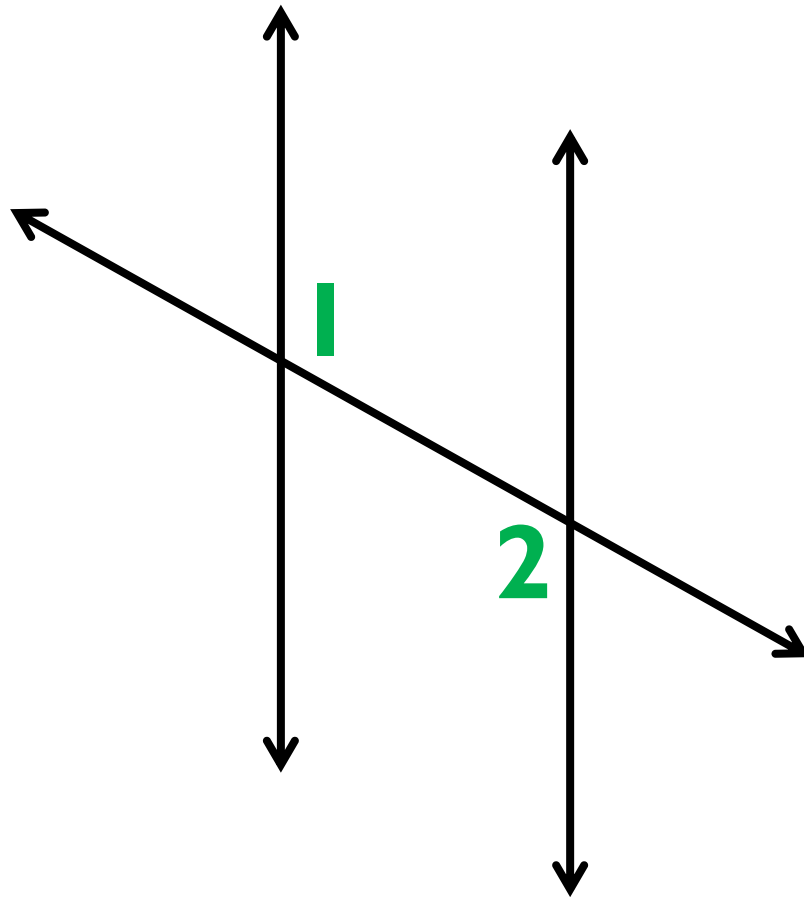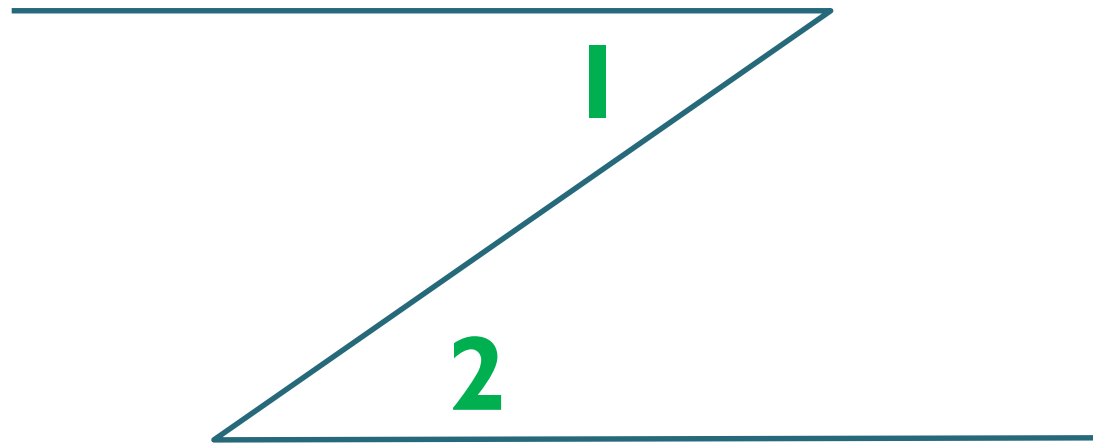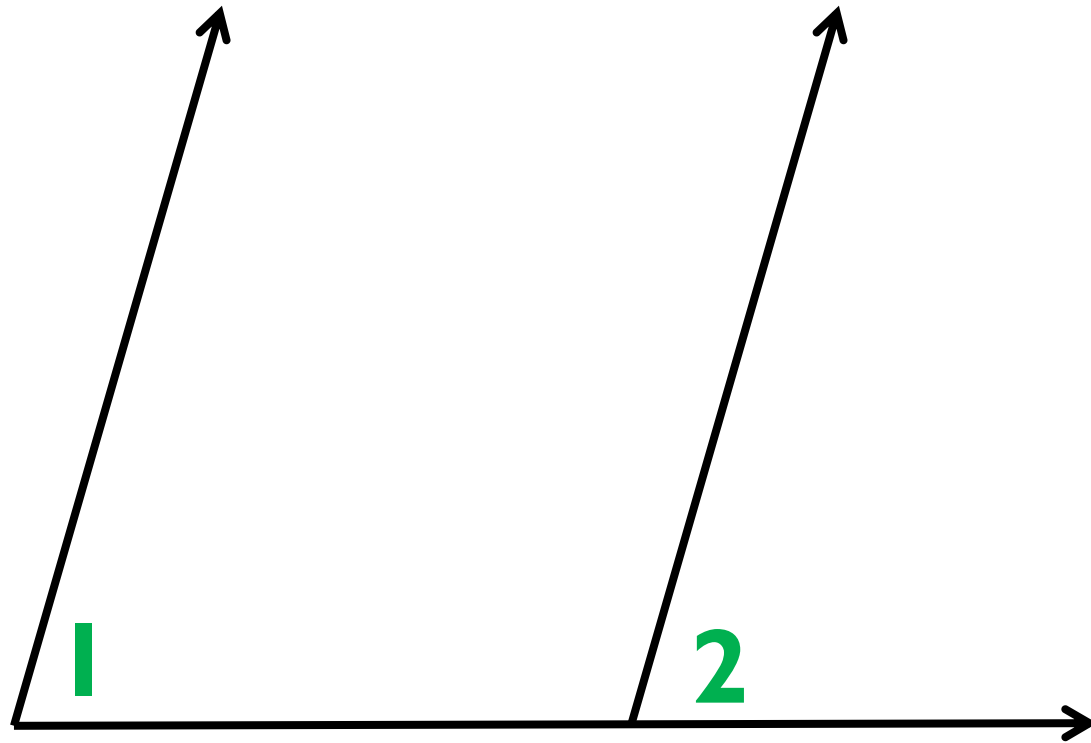
Which type of angle?

Alternate Interior

Which type of angle?

Corresponding

Which type of angle?

Same-side interior

Which type of angle?

Corresponding
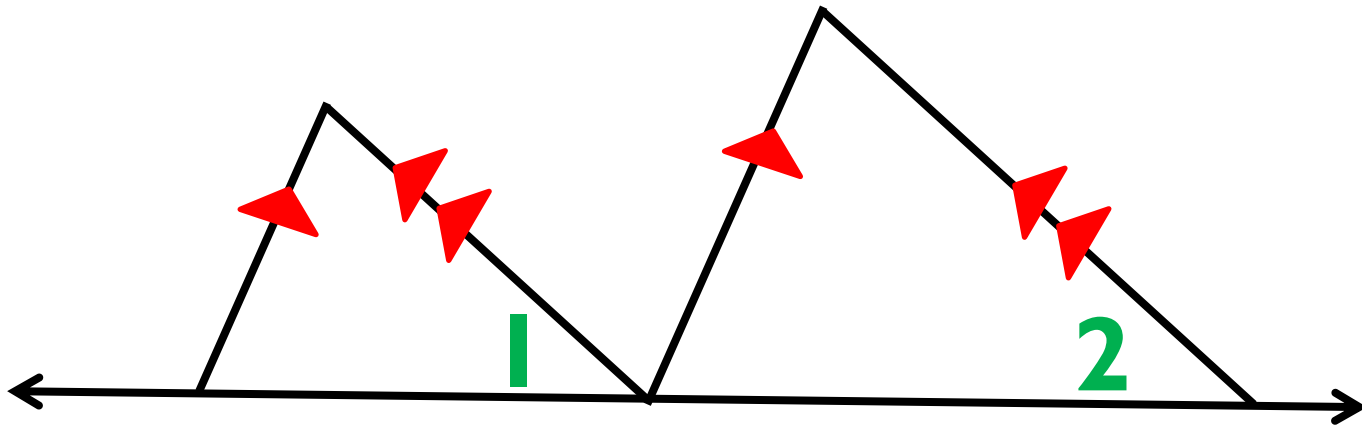
- Look at angles 3 and 6. What do you think is the relationship between them?

1   2
3   4
5   6
7   8

- Angles like this are called "alternate interior."
- Interior = between the lines. Alternate = different sides of the transversal.

- If you have parallel lines, angles like this will always be congruent.

- Can you see another pair of alternate interior angles?

- Look at angles 4 and 6. What do you think is the relationship between them?

1   2
3   **4**

5   **6**
7   8

- Angles like this are called "same-side interior."
- Interior = between the lines. Same-side = same side of the transversal.

- If you have parallel lines, angles like this will always be supplementary.
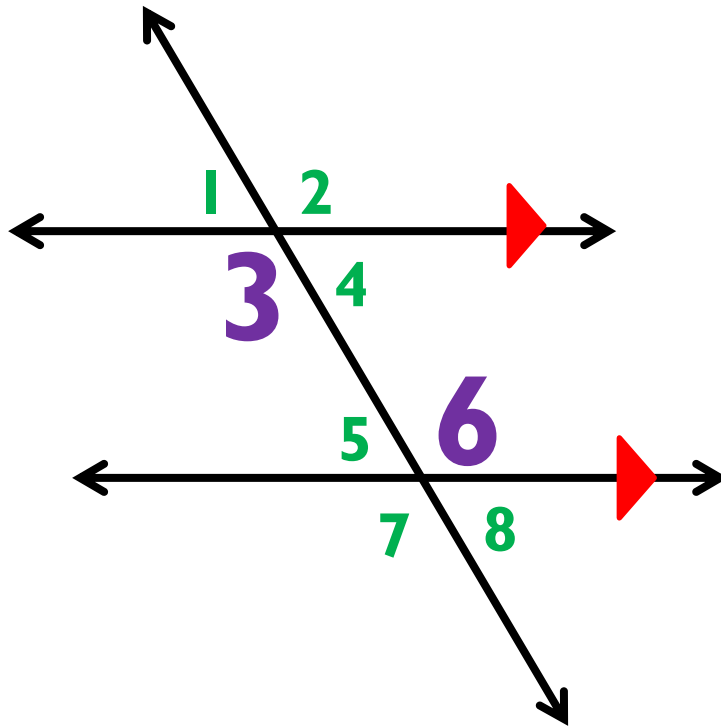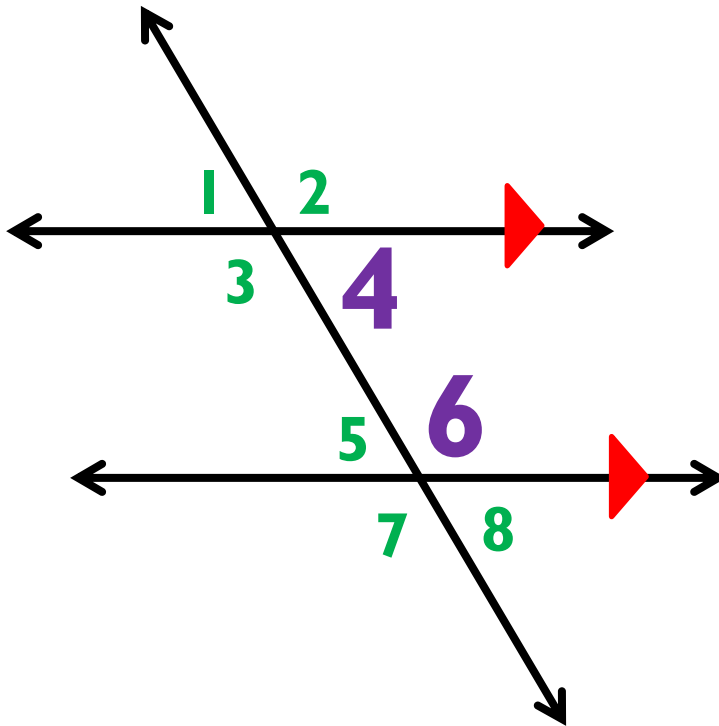
- Can you see another pair of same-side interior angles?

- Look at angles 1 and 8. What do you think is the relationship between them?

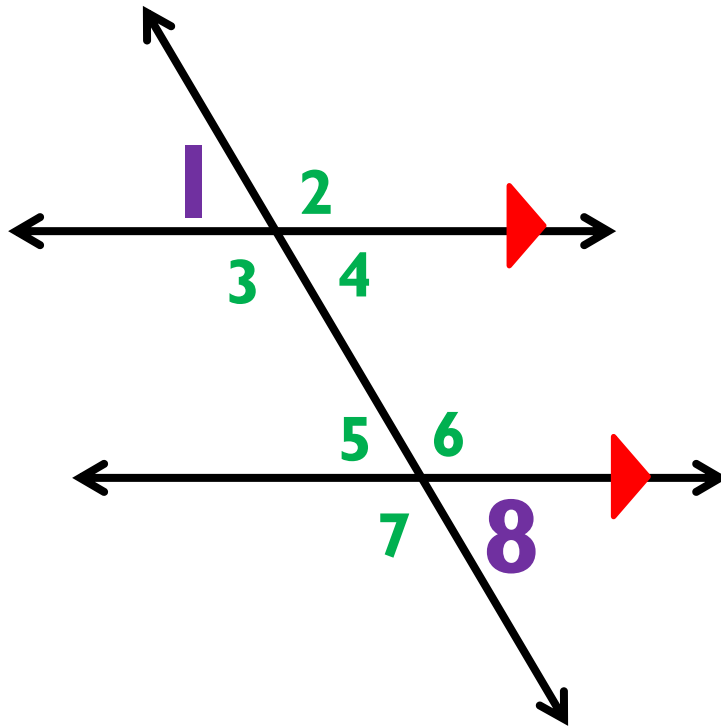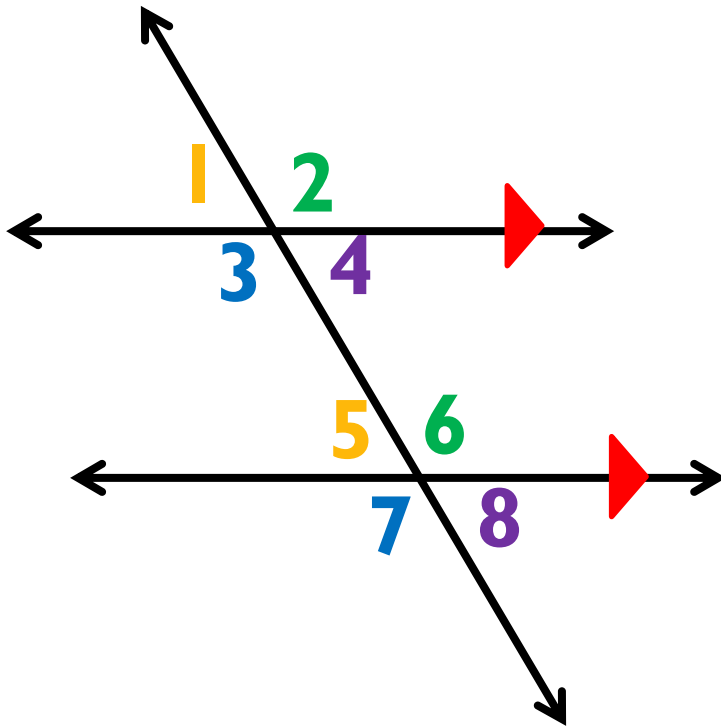- Angles like this are called "alternate exterior."
- Exterior = outside the lines. Alternate = opposite sides of the transversal.

- If you have parallel lines, angles like this will always be congruent.
- Can you see another pair of alternate exterior angles?

- Remember, if the lines are parallel, <u>corresponding</u> angles are congruent.
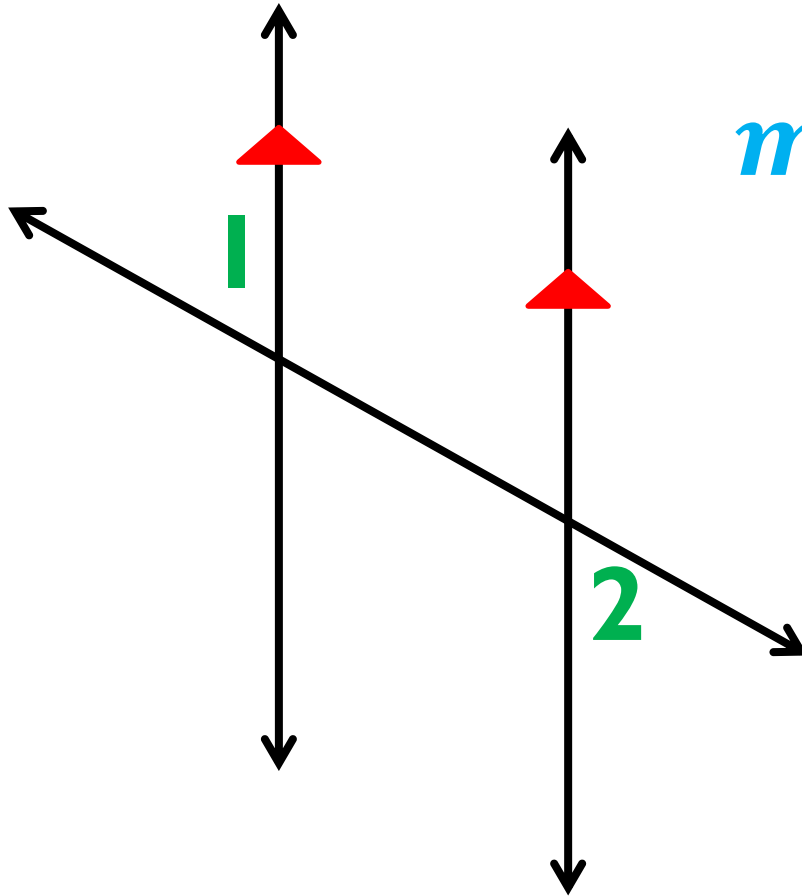
IN YOUR BINDER:

- **WHEN THE LINES ARE PARALLEL:**
  - Corresponding: congruent
  - Alternate Interior: congruent
  - Alternate Exterior: congruent
  - Same-side Interior: supplementary
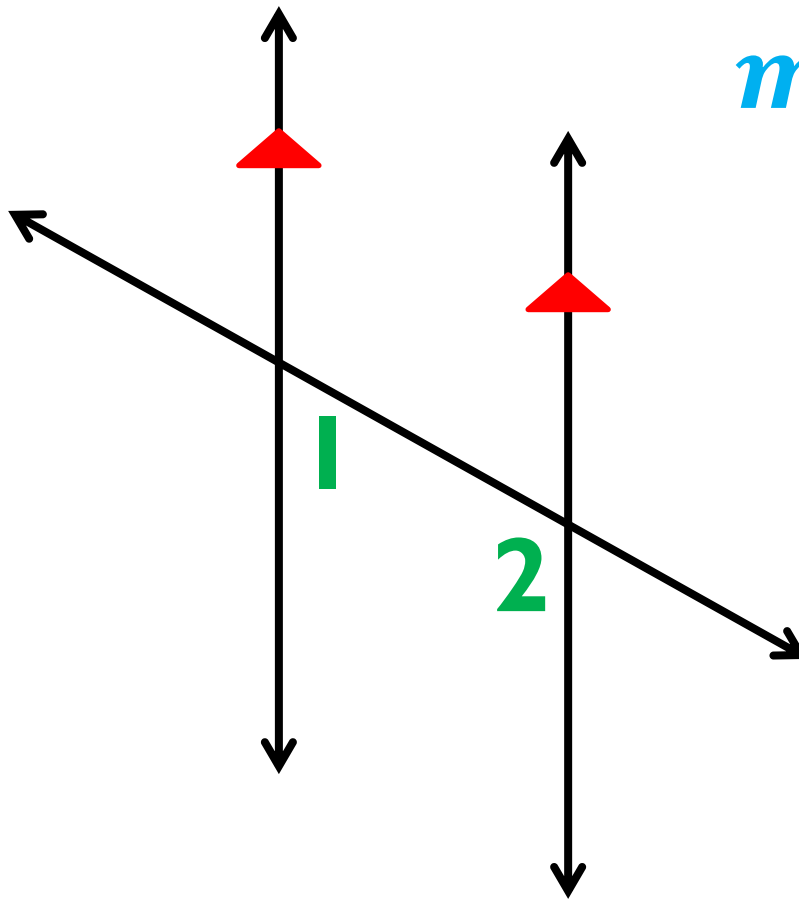
Whiteboards

If the measure of angle 1 is 30 degrees, what is the measure of angle 2? **HOW DO YOU KNOW?**

$$m\angle 2 = 30^o; \text{ they are alternate exterior}$$

Whiteboards

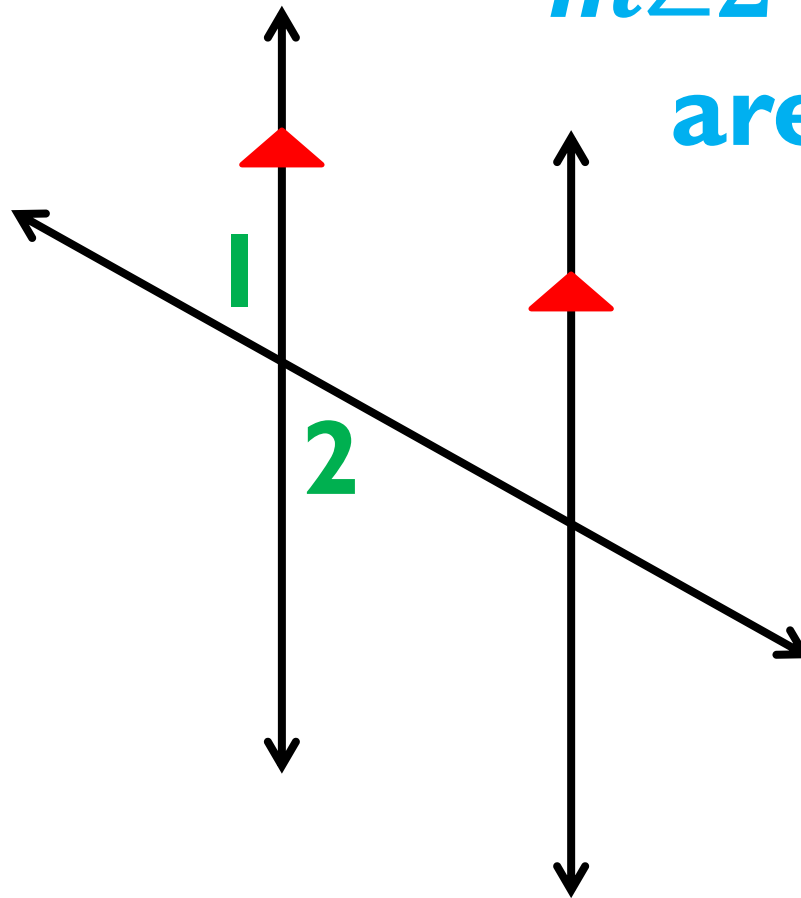If the measure of angle 1 is 45 degrees, what is the measure of angle 2? **HOW DO YOU KNOW?**

$$m\angle 2 = 135^{o}; \text{they are same-side interior}$$

1

2

Whiteboards

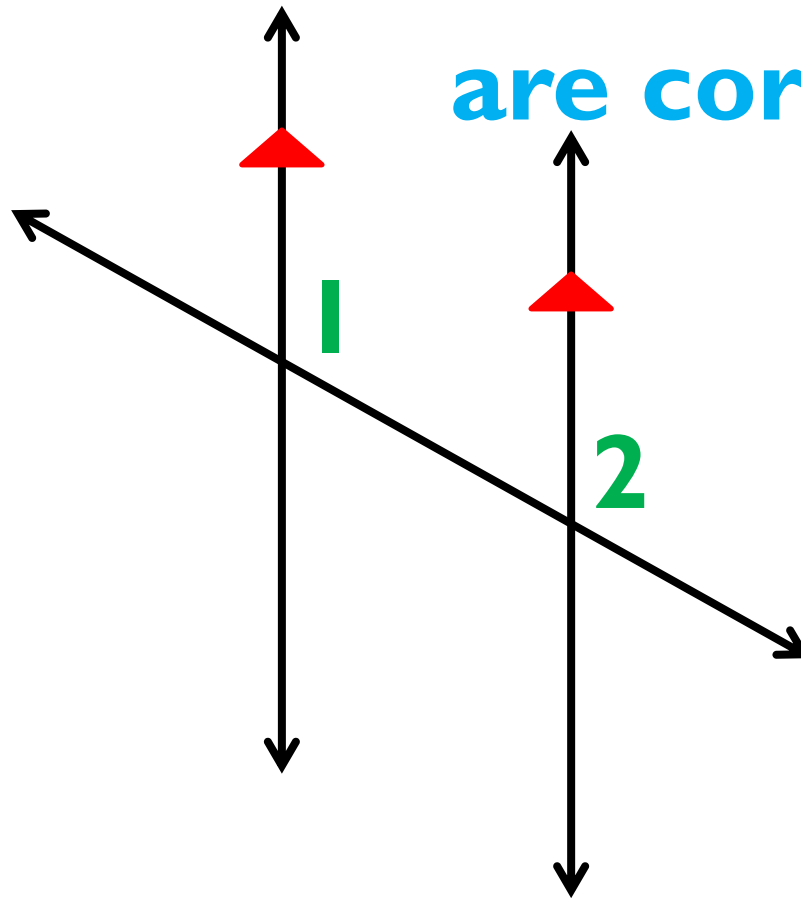If the measure of angle 1 is 25 degrees, what is the measure of angle 2? **HOW DO YOU KNOW?**

$$m\angle 2 = 25^o; \text{ they}$$
$$\text{are vertical}$$

Whiteboards

If the measure of angle 1 is 115 degrees, what is the measure of angle 2? **HOW DO YOU KNOW?**
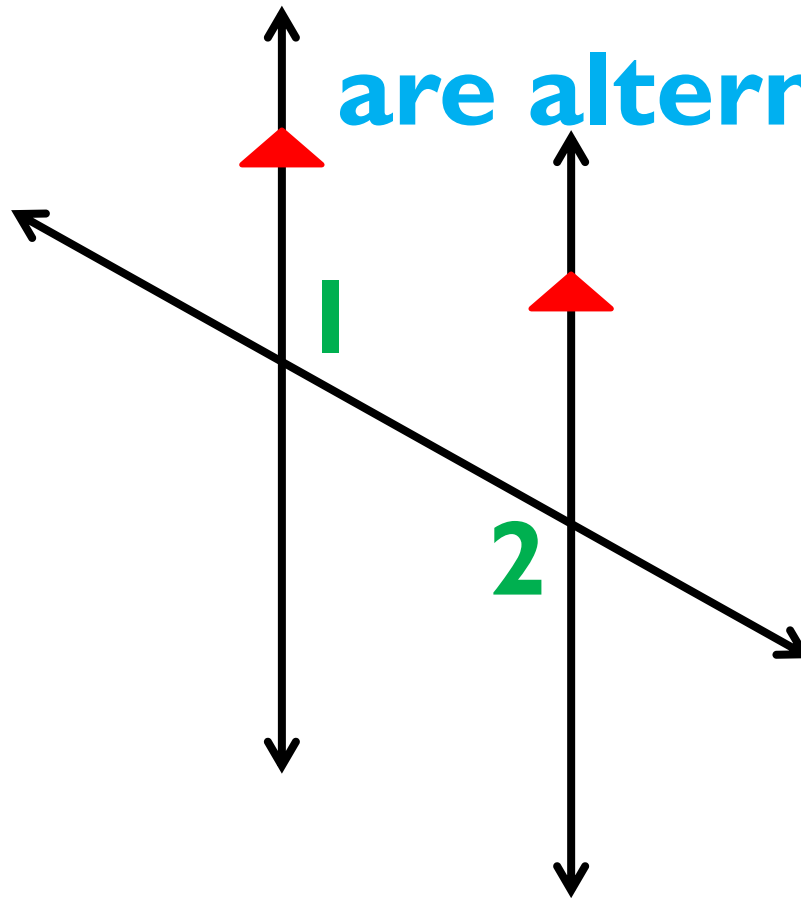
$$m\angle 2 = 115^o; \text{ they are corresponding}$$

Whiteboards

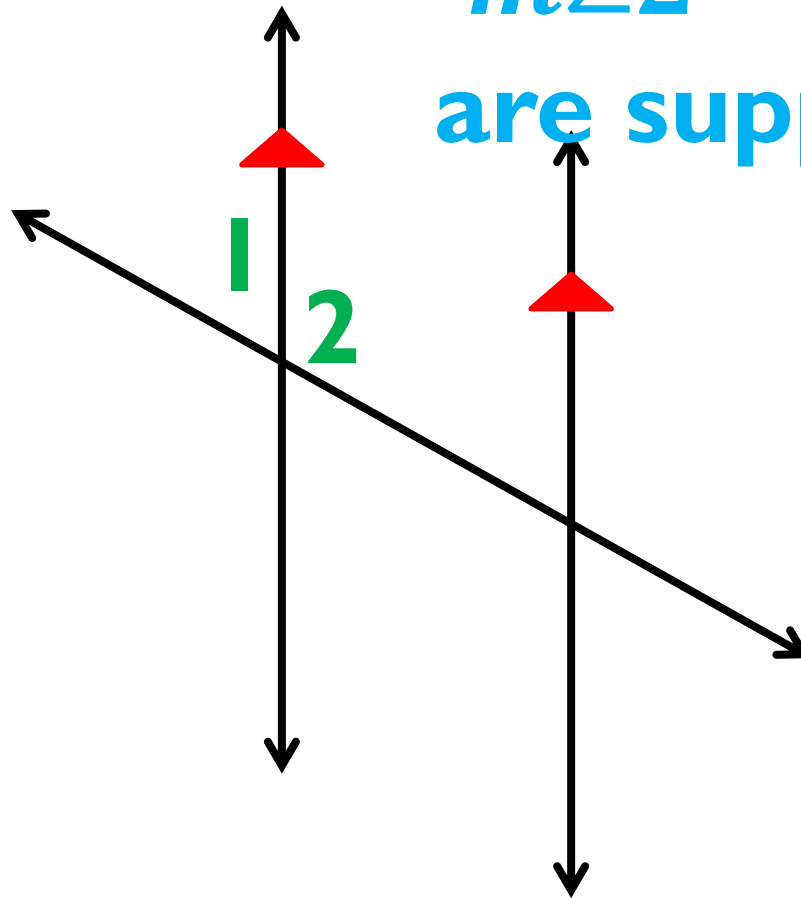If the measure of angle 1 is 107 degrees, what is the measure of angle 2? **HOW DO YOU KNOW?**

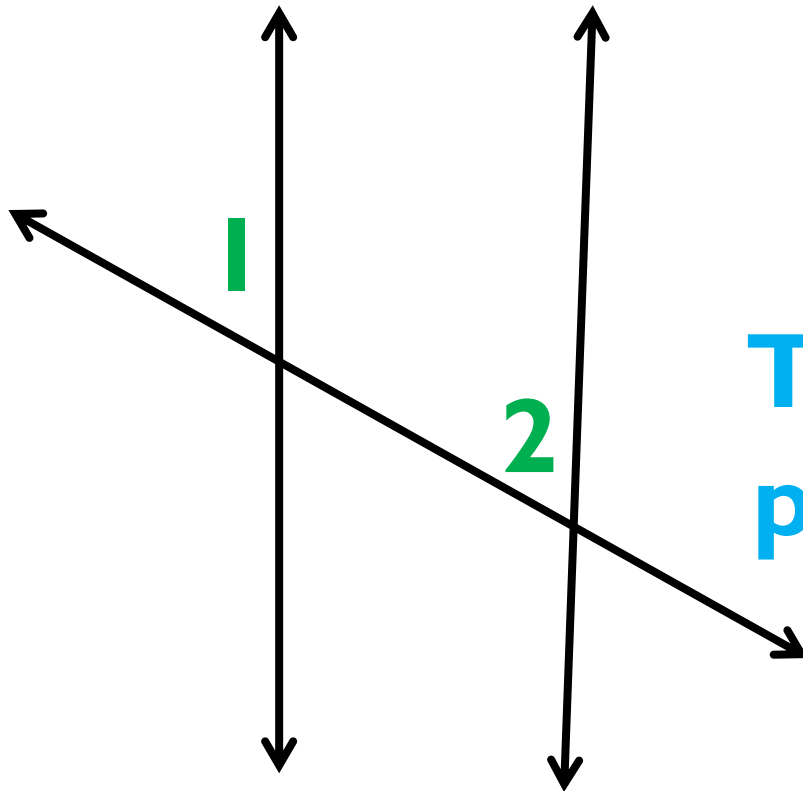$$m\angle 2 = 107^o; \text{ they}$$
$$\text{are alternate interior}$$

1

2

Whiteboards

If the measure of angle 1 is 41 degrees, what is the measure of angle 2? **HOW DO YOU KNOW?**

$$m\angle 2 = 139^{o}; \text{ they}$$
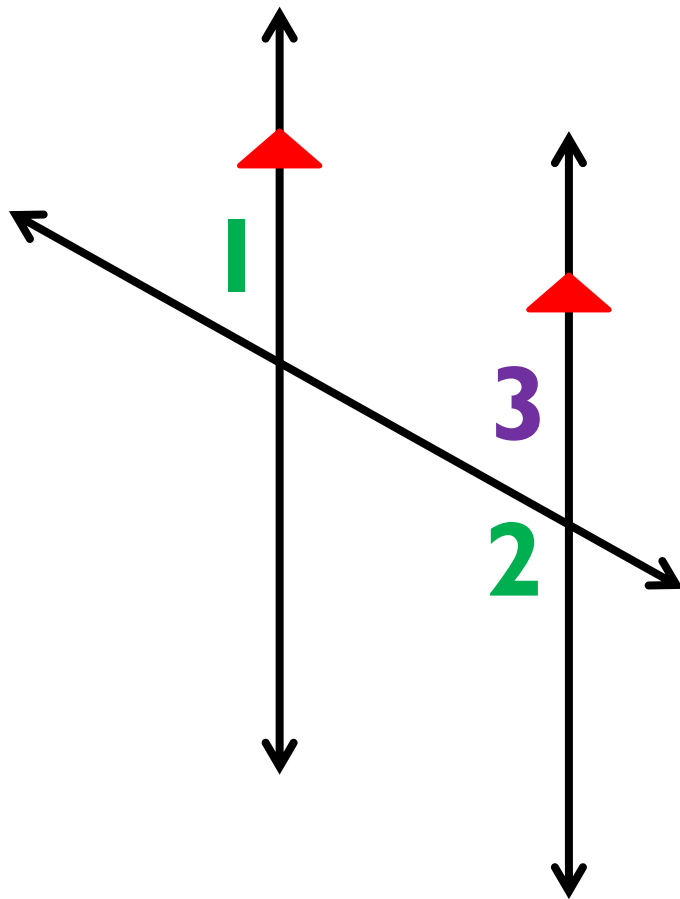
$$\text{are supplementary}$$

1

2

Whiteboards

If the measure of angle 1 is 41 degrees, what is the measure of angle 2? **HOW DO YOU KNOW?**

TRICK QUESTION: These lines aren't parallel. We don't know!

1

2

Extra one…

If the measure of angle 1 is 40 degrees, what is the measure of angle 2? **HOW DO YOU KNOW?**

1

3

2

$m\angle 2 = 140^{o}$; angle 3 is 40 degrees because it corresponds to angle 1; angle 2 is supplementary with angle 3

HOMEWORK

- Parallel Lines WS