## Unit 7 Lesson 9: Use a Protractor to Measure Angles

### WU True or False: There's Something about 45 (Warm up)

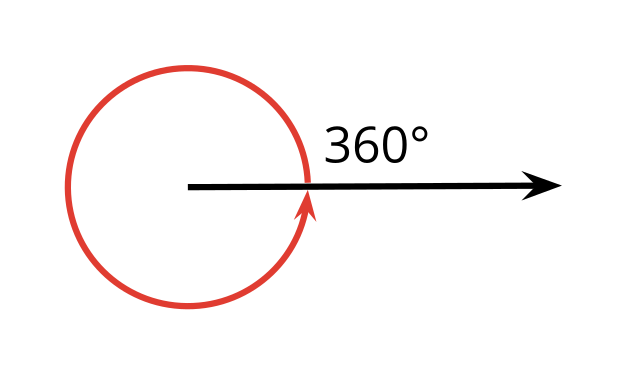
#### Student Task Statement

Decide if each statement is true or false. Be prepared to explain your reasoning.

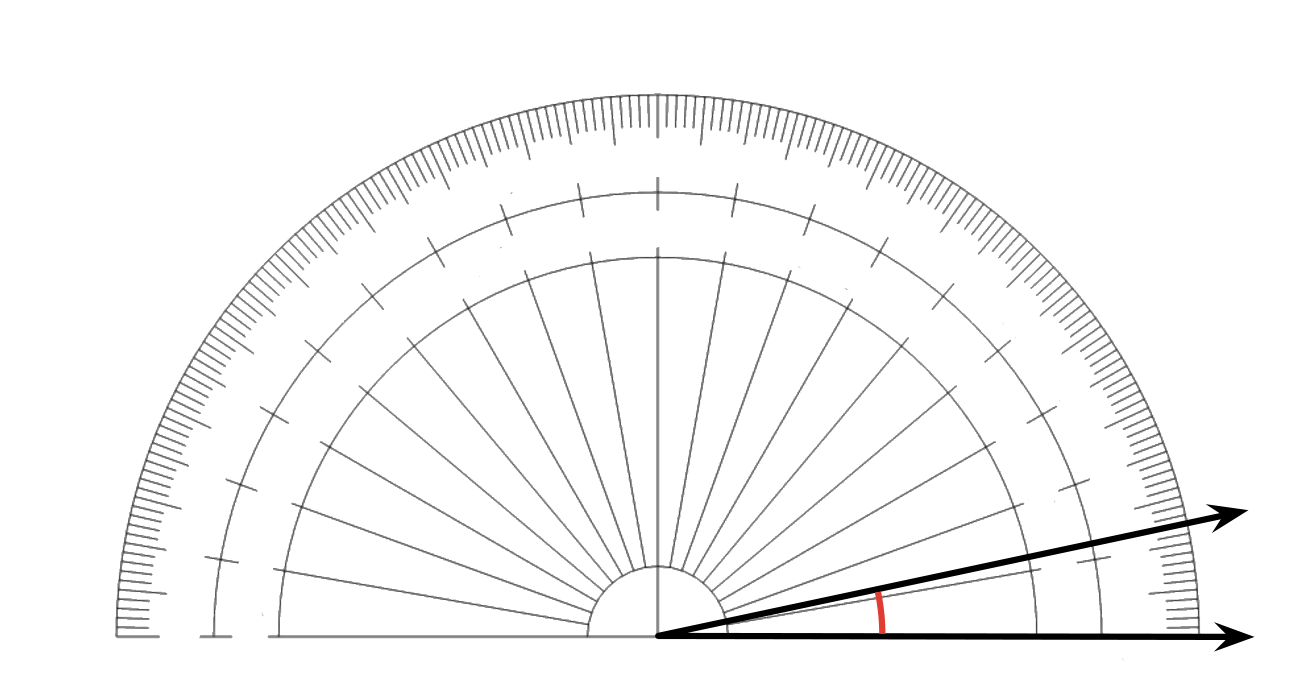
### 1 How Large is a Angle?

#### Student Task Statement

1. A ray that turns all the way around its endpoint and back to its starting place has made a full turn or has turned .

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* What fraction of a full turn is each of the following angle measurements?

1. Your teacher will give you a **protractor**, a tool for measuring the number of degrees in an angle.
   1. How is shown on the protractor?
   2. How many measurements do you see?
2. A protractor with no numbers has been placed over an angle.
   * The center of the protractor is lined up with the vertex of the angle.
   * The straight edge of the protractor is lined up with a ray of the angle.

* How many degrees is this angle? Explain how you know.
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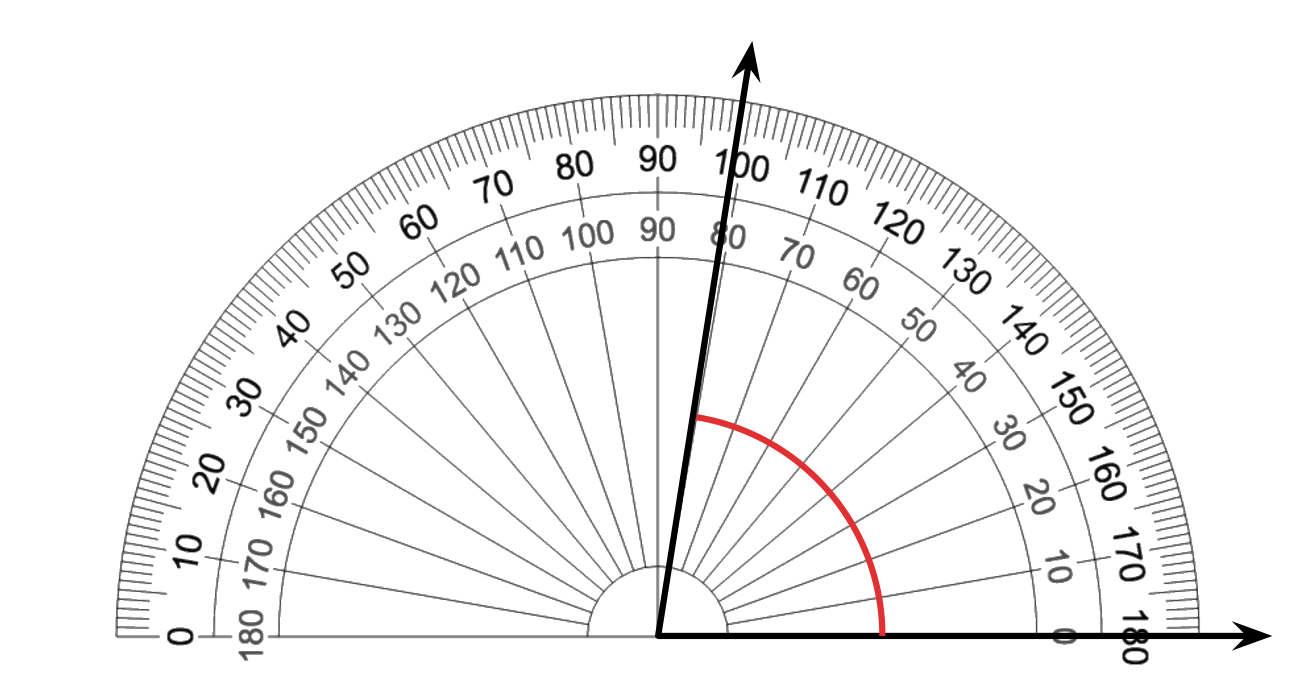
1. An angle contains thirty angles, as shown. How many degrees is this angle?

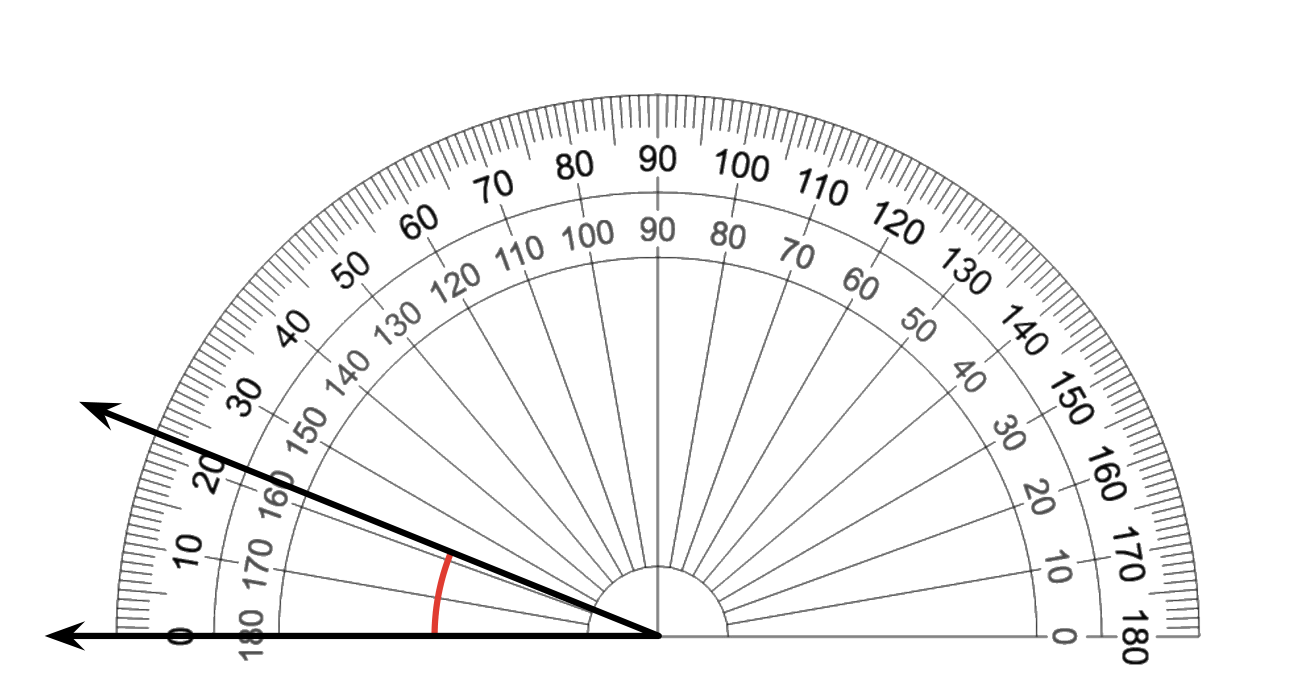
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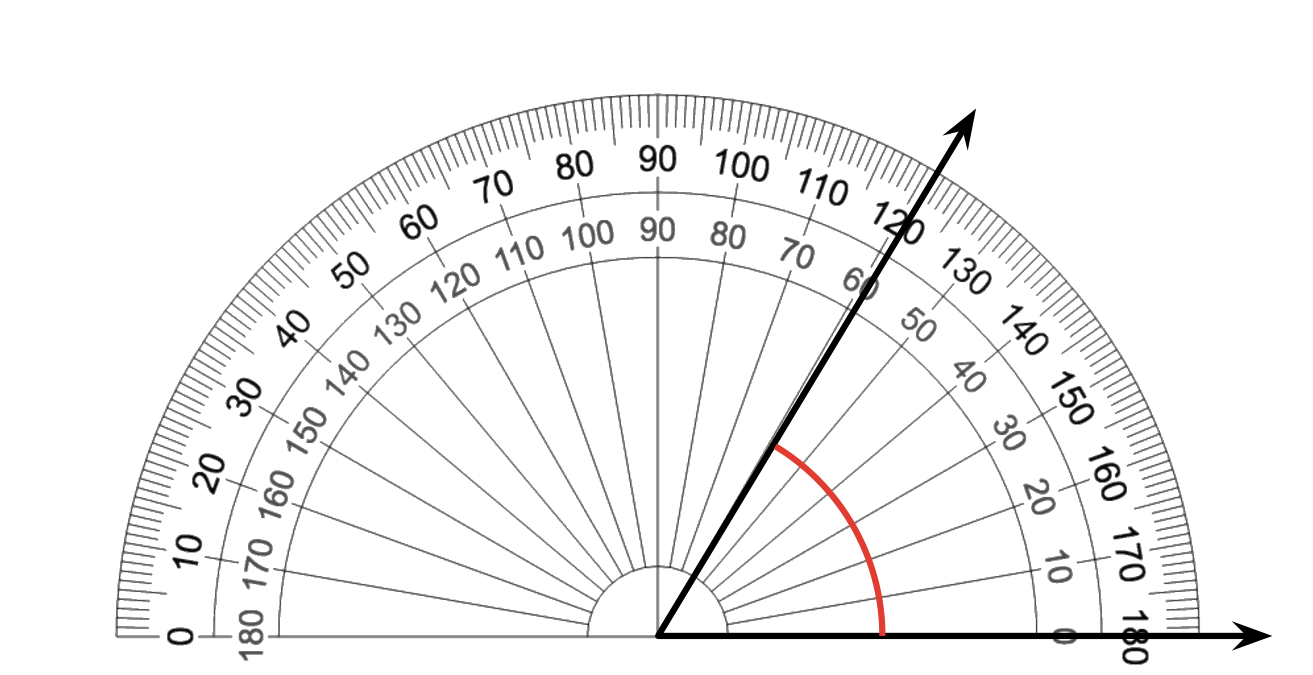
### 2 Use a Protractor

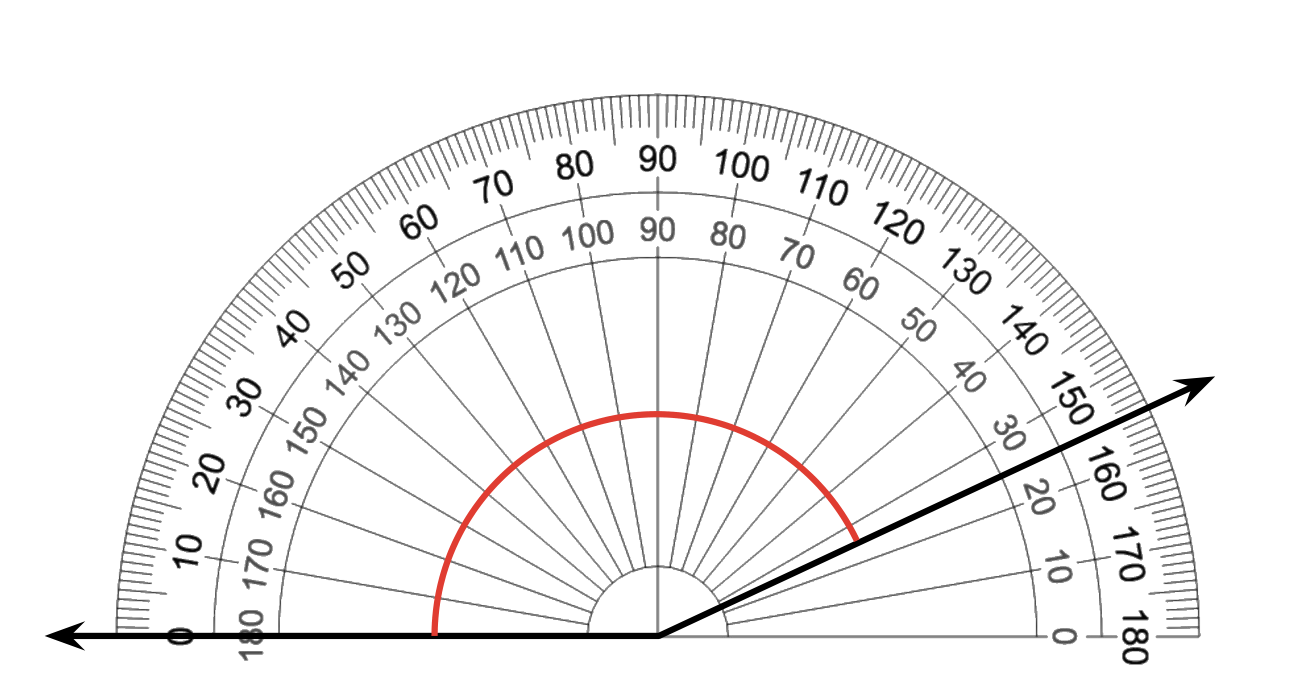
#### Student Task Statement

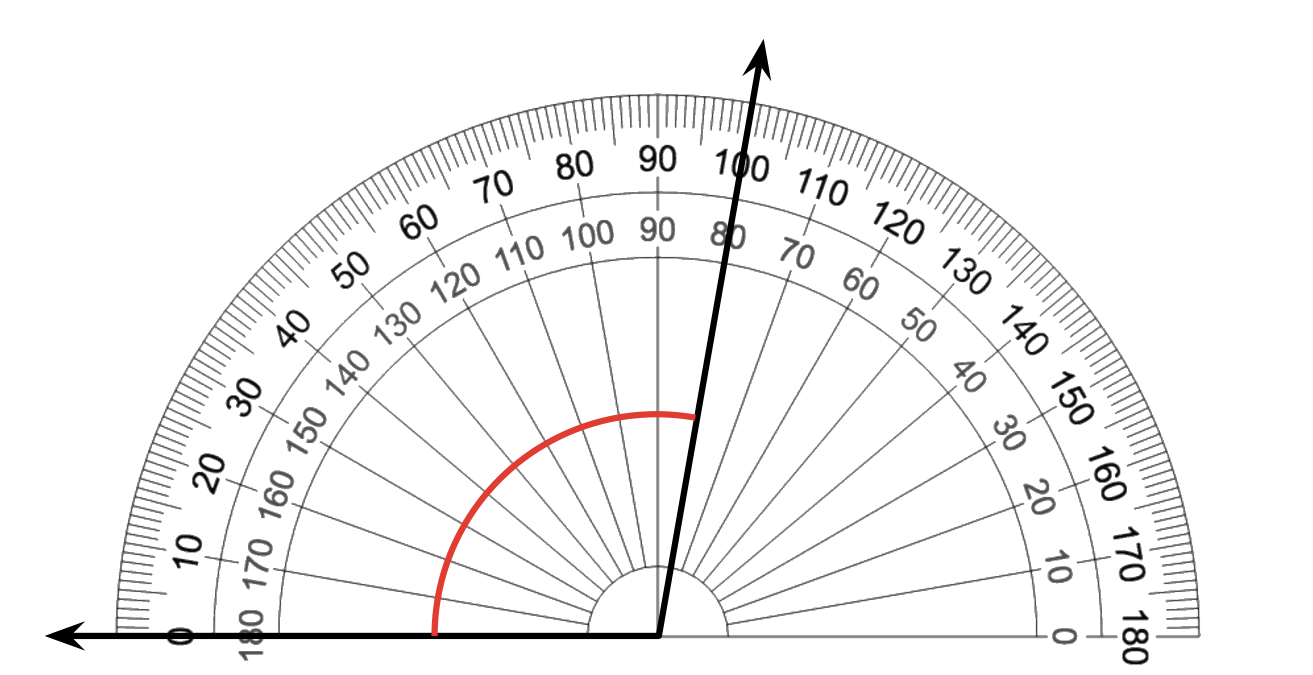
1. Here are four angles whose sizes you may have estimated earlier. A protractor has been placed over each angle. Measure the size of each angle in degrees.

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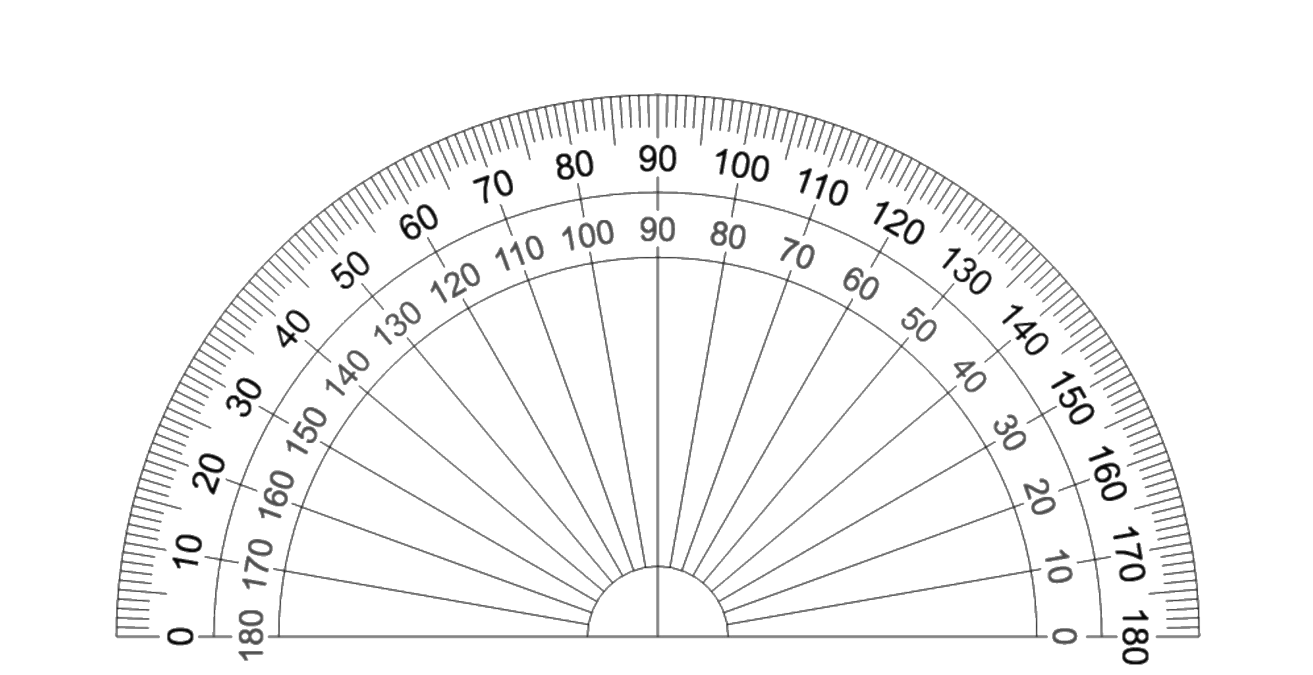
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2. Elena and Kiran are measuring an angle with a protractor. Elena says the angle is . Kiran says it shows . Why might they end up with different measurements? Which one is correct? Explain your reasoning.

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#### Images for Activity Synthesis





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