

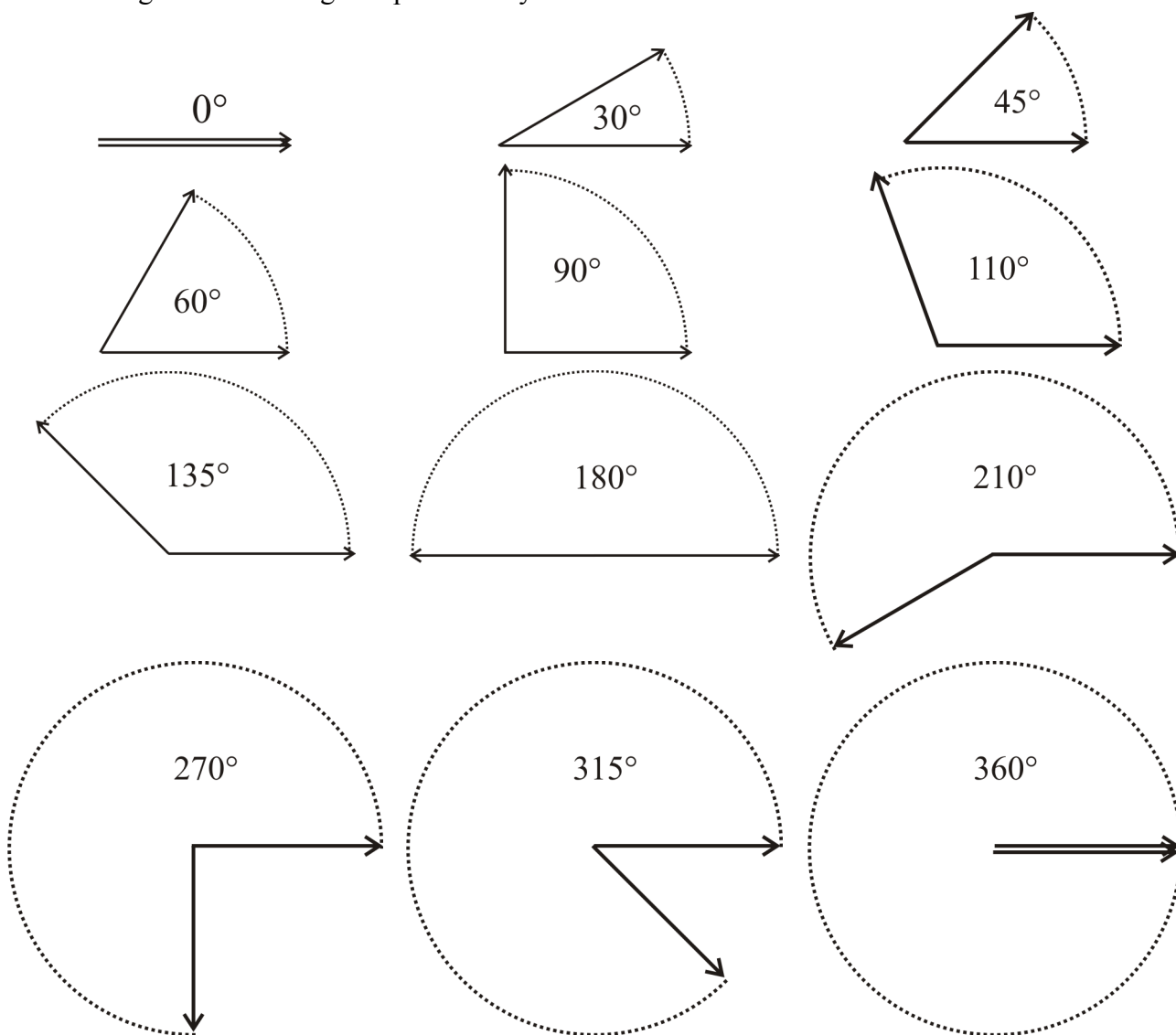
Measuring Angles

Remember how one side of the angle traces out a circular arc? We use that *circle* to measure how big the angle is. We look at how much the angle has “opened” as compared to the full circle.

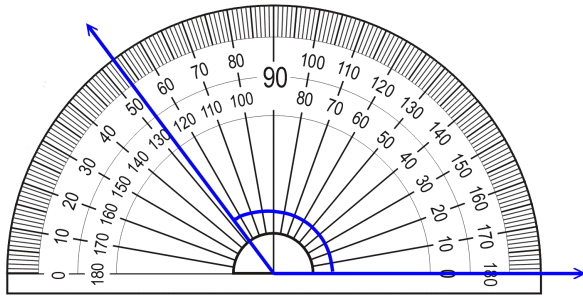
Angles are measured in *degrees*. The symbol for degrees is a little circle $^{\circ}$.

- The FULL CIRCLE is 360° (360 degrees).
- A half circle or a straight angle is 180° .
- A quarter circle or a right angle is 90° .

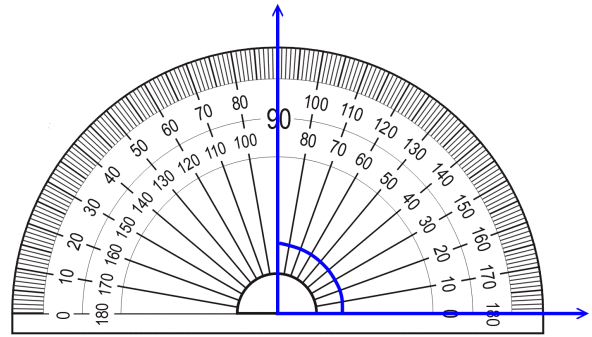
Show the angles below using two pencils. Try to “see” the circle that is traced out in the air.



This is a *1-degree* angle!



an obtuse angle; 127°



a right angle; 90°

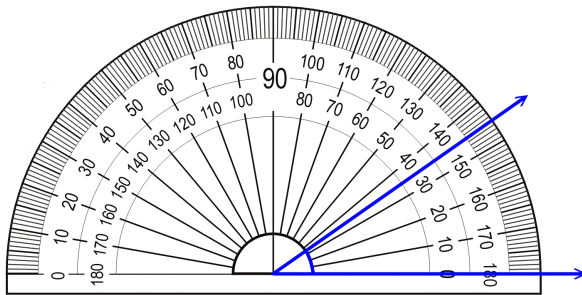
How to measure an angle with a **protractor**:

- Place the midpoint of the protractor on the VERTEX of the angle.
- Line up one side of the angle with the zero line of the protractor (where you see the number 0).
- Read the degrees where the other side crosses the number scale.

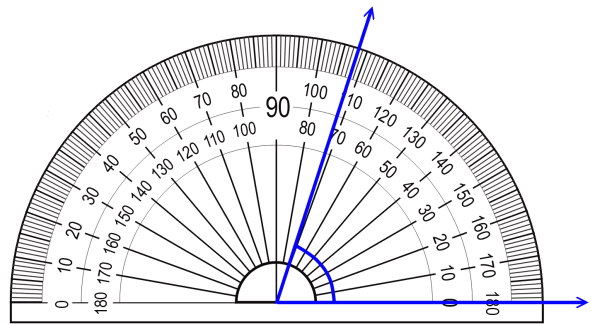
Take care to read from the right set of numbers. A protractor has two sets of numbers: one set goes from 0 to 180, the other set from 180 to 0. Which one you read depends on how you place the protractor: place it so that one side of the angle lines up with one of the zeros, and read that set of numbers.

In the examples above we lined up the one side of the angle with the zero of the lower set of numbers, so we need to read the lower set of numbers.

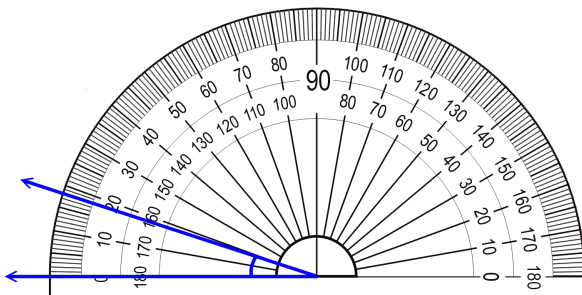
1. Measure the angles.



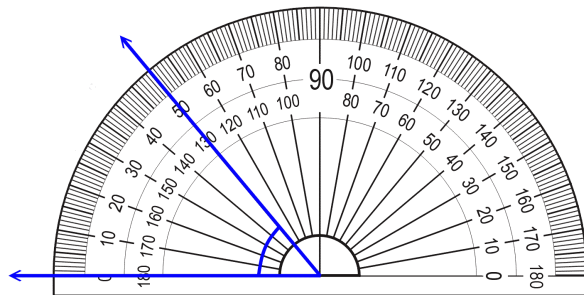
a. _____ $^\circ$



b. _____ $^\circ$



c. _____ $^\circ$



d. _____ $^\circ$