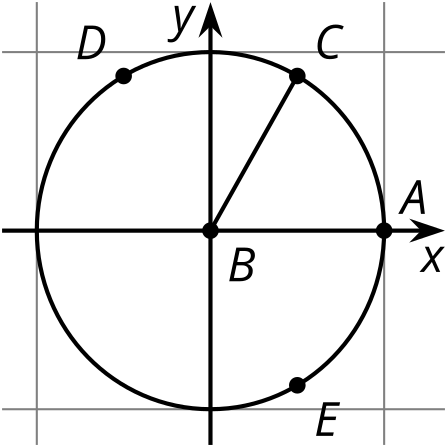
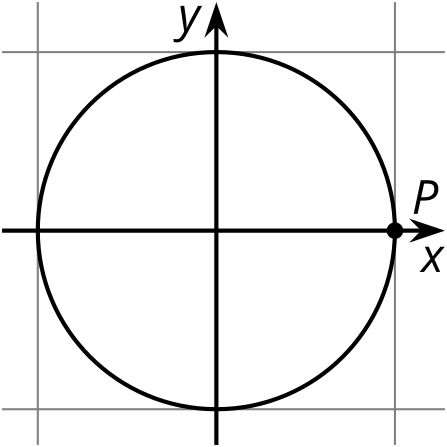
### Lesson 4 Practice Problems

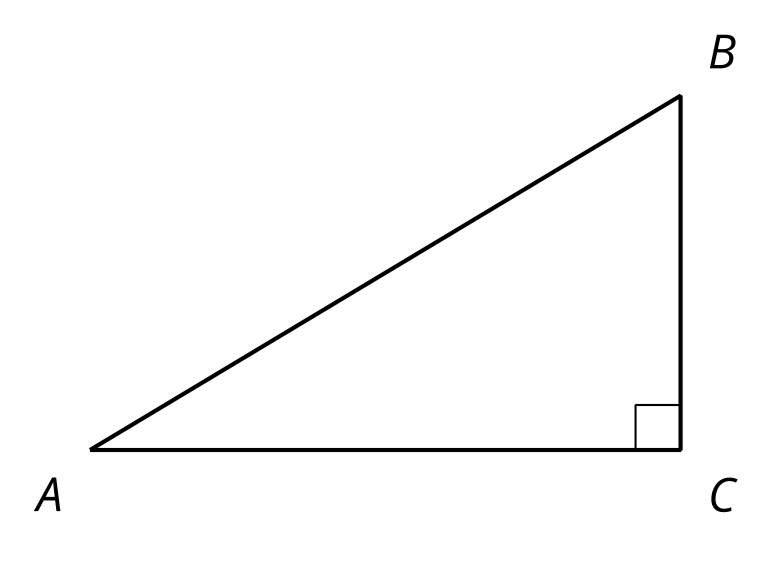
1. Angle measures radians, and the coordinates of are about .

* 
  1. The measure of angle is radians. What are the approximate coordinates of ? Explain how you know.
  2. The measure of angle is radians. What are the approximate coordinates of ? Explain how you know.

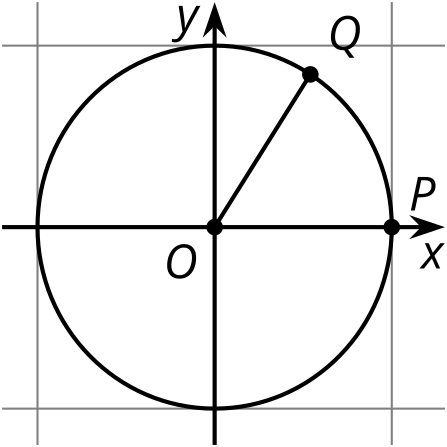
1. Give an angle of rotation centered at the origin that sends point to a location whose coordinates satisfy the given conditions.
   1. and
   2. and
   3. and

* 

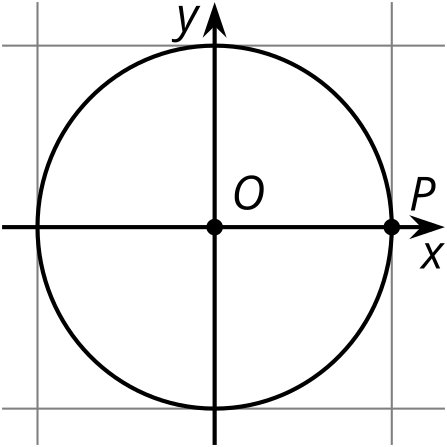
1. Lin calculates and finds that it is 1.0085.
   1. Explain why is not on the unit circle.
   2. Is  a good estimate for the coordinates of a point on the unit circle? Explain how you know.
2. The -coordinate of a point on the unit circle is 0. If point is the result of rotating the point  by radians counterclockwise about the origin, what angle could represent? Select **all** that apply.
   1. 0
3. Here is triangle . is shorter than . Which statements are true? Select **all** that apply.

* 
* (From Unit 6, Lesson 2.)

1. Angle measures one radian. The radius of the circle is 1 unit.
   1. What is the length of arc ?
   2. Explain why the length of arc is less than of the full circle.

* 
* (From Unit 6, Lesson 3.)

1. Label these points on the unit circle:

* 
  1. is the image of after a rotation with center .
  2. is the image of after a rotation with center .
  3. is the image of after a rotation with center .
  4. is the image of after a rotation with center .
* (From Unit 6, Lesson 3.)



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