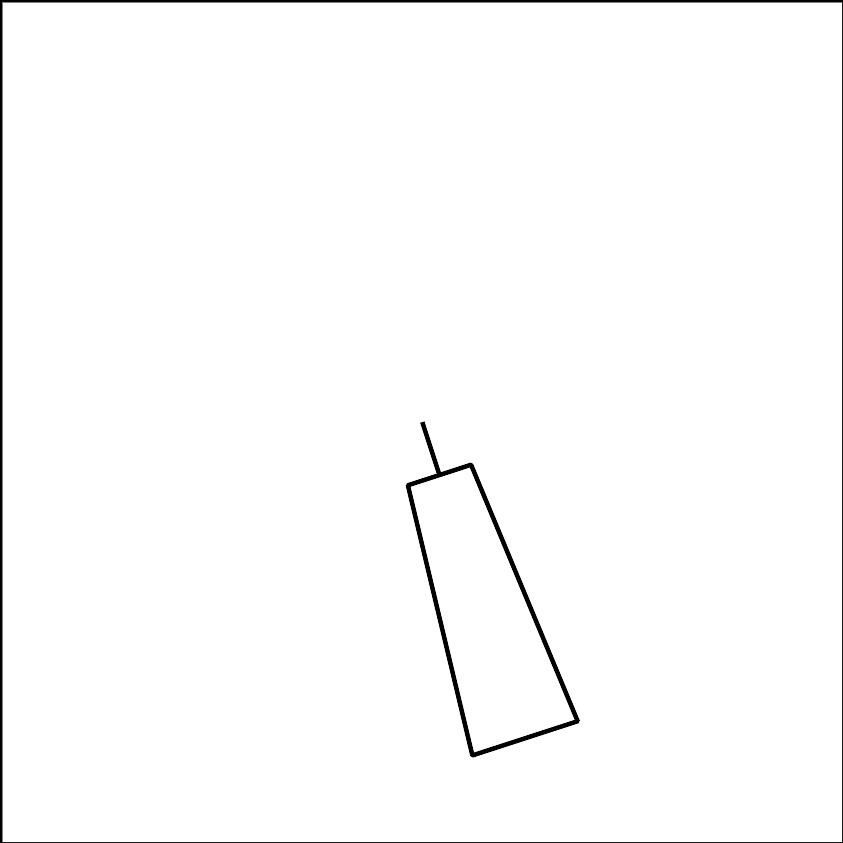
### Lesson 13 Practice Problems

1. For each trigonometric function, indicate the amplitude and midline.
2. Here is a graph of the equation .
   1. Indicate the midline on the graph.
   2. Use the graph to find the amplitude of this sine equation.

* 

1. Select **all** trigonometric functions with an amplitude of 3.
2. The center of a windmill is 20 feet off the ground and the blades are 10 feet long.

* 
* ​​​​​​

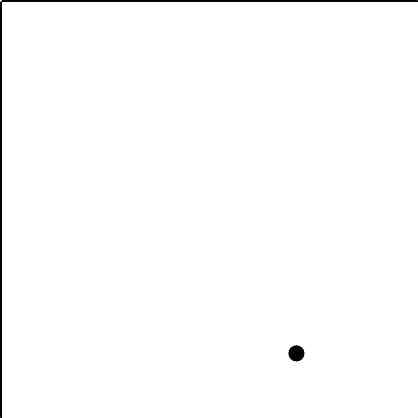
|  |  |
| --- | --- |
| * rotation angle of windmill | * vertical position of in feet |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

* 1. Fill out the table showing the vertical position of after the windmill has rotated through the given angle.
  2. Write an equation for the function that describes the relationship between the angle of rotation and the vertical position of the point , , in feet.

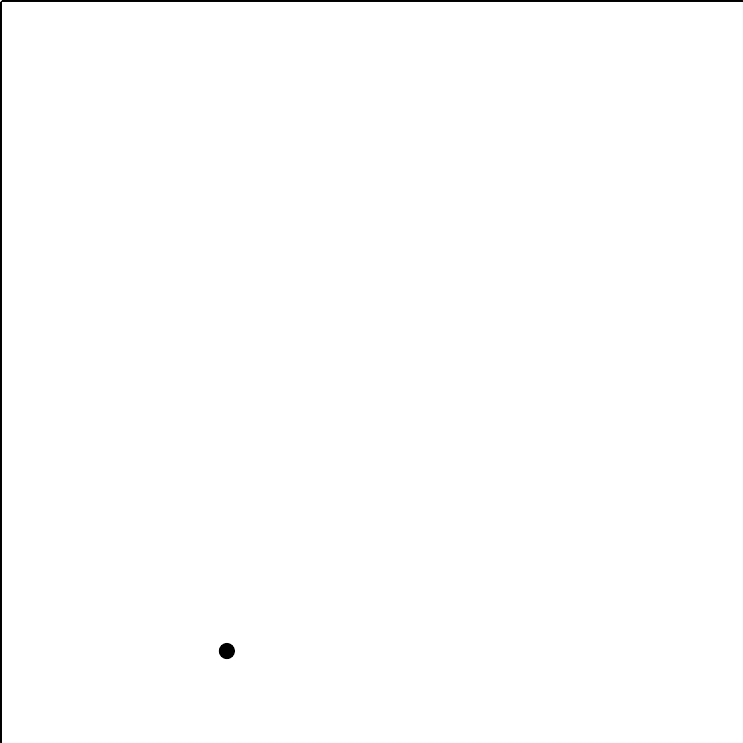
1. The measure of angle , in radians, satisfies . If is between 0 and what can you say about the measure of ?

* (From Unit 6, Lesson 9.)

1. Which rotations, with center , take to ? Select **all** that apply.

* 
  1. radians
  2. radians
  3. radians
  4. radians
  5. radians
* (From Unit 6, Lesson 10.)

1. The picture shows two points and on the unit circle.

* Explain why the tangent of and is 2.
* 
* (From Unit 6, Lesson 12.)



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