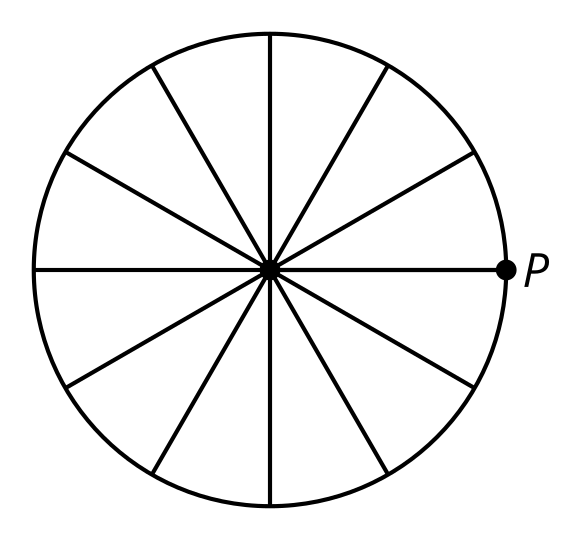
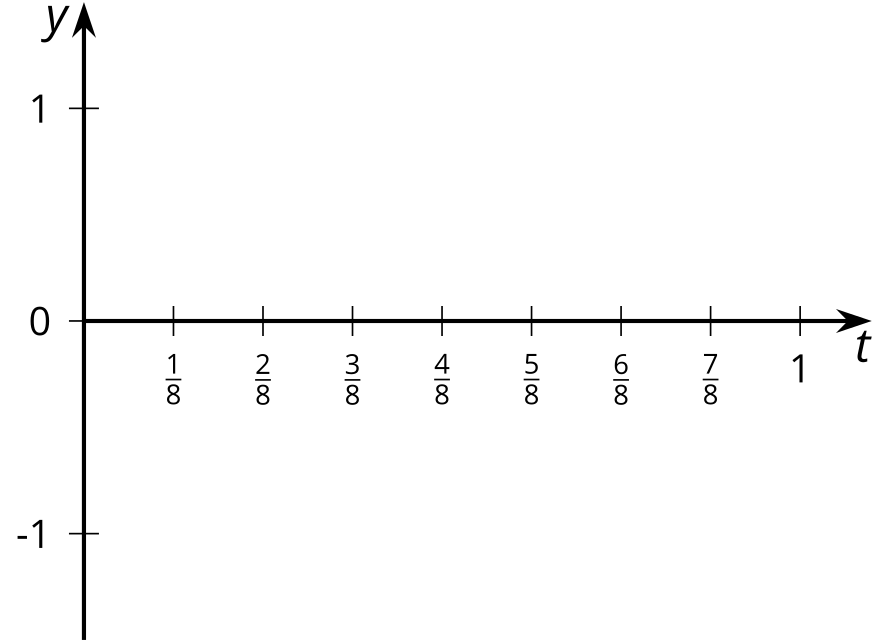
### Lesson 16 Practice Problems

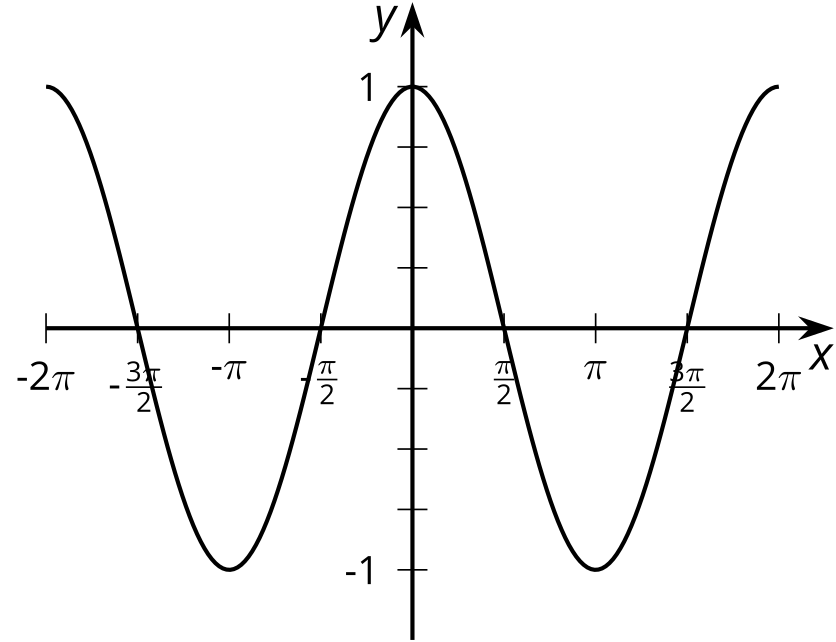
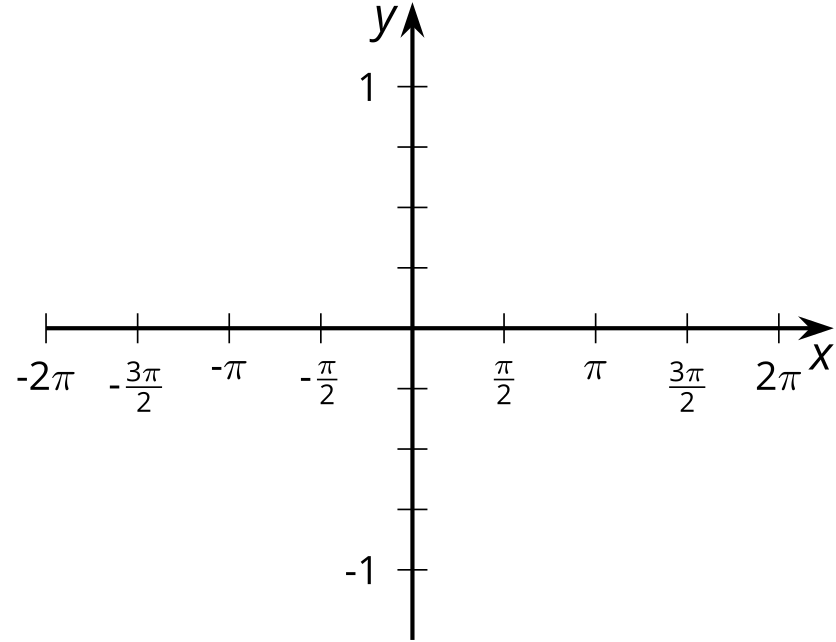
1. A wheel rotates three times per second in a counterclockwise direction. The center of the wheel does not move.

* What angle does the point rotate through in one second?
* 
  1. radians
  2. radians
  3. radians
  4. radians

1. A bicycle wheel is spinning in place. The vertical position of a point on the wheel, in inches, is described by the function . Time is measured in seconds.
   1. What is the meaning of 13.5 in this context?
   2. What is the meaning of 5 in this context?
   3. What is the meaning of 20 in this context?
2. Each expression describes the vertical position, in feet off the ground, of a carriage on a Ferris wheel after minutes. Which function describes the largest Ferris wheel?
3. Which trigonometric function has period 5?
   1. What is the period of the function given by ? Explain how you know.
   2. Sketch a graph of .

* 

1. Here is a graph of .

* 
  1. Sketch a graph of .
  + 
  1. How do the two graphs compare?
* (From Unit 6, Lesson 15.)

1. Here is a table that shows the values of functions , , and for some values of .

|  |  |  |  |
| --- | --- | --- | --- |
| * 0 | * -125 | * -125 | * -125 |
| * 3 | * -8 | * -64 | * -42.875 |
| * 6 | * 1 | * -27 | * -8 |
| * 9 | * 64 | * -8 | * -0.125 |
| * 12 | * 343 | * -1 | * 1 |
| * 15 | * 1000 | * 0 | * 15.625 |
| * 18 | * 2197 | * 1 | * 64 |
| * 21 | * 4096 | * 8 | * 166.375 |

* 1. Use the table to determine the value of in the equation .
  2. Use the table to determine the value of in the equation .
* (From Unit 5, Lesson 9.)



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