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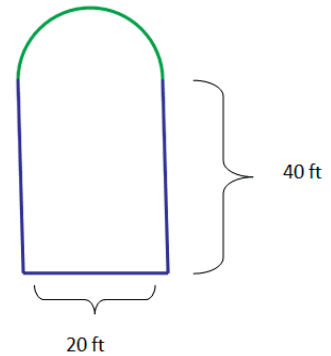
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## Lesson 16: The Most Famous Ratio of All

### Exit Ticket

Brianna's parents built a swimming pool in the backyard. Brianna says that the distance around the pool is 120 feet.

1. Is she correct? Explain why or why not.



2. Explain how Brianna would determine the distance around the pool so that her parents would know how many feet of stone to buy for the edging around the pool.

3. Explain the relationship between the circumference of the semicircular part of the pool and the width of the pool.

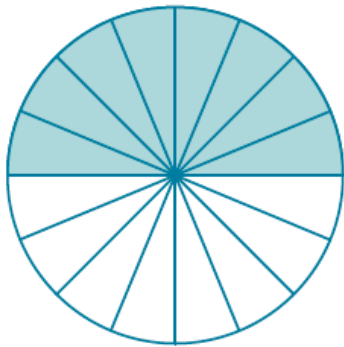
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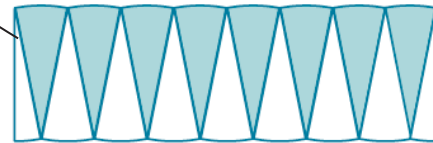
## Lesson 17: The Area of a Circle

### Exit Ticket

Complete each statement using the words or algebraic expressions listed in the word bank below.



1. The length of the \_\_\_\_\_ of the rectangular region approximates the length of the \_\_\_\_\_ of the circle.



2. The \_\_\_\_\_ of the rectangle approximates the length of one-half of the circumference of the circle.

3. The circumference of the circle is \_\_\_\_\_.

4. The \_\_\_\_\_ of the \_\_\_\_\_ is  $2r$ .

5. The ratio of the circumference to the diameter is \_\_\_\_\_.

6. Area (circle) = Area of (\_\_\_\_\_) =  $\frac{1}{2} \cdot \text{circumference} \cdot r = \frac{1}{2}(2\pi r) \cdot r = \pi \cdot r \cdot r =$  \_\_\_\_\_.

#### Word bank

radius

height

base

 $2\pi r$ 

diameter

circle

rectangle

 $\pi r^2$  $\pi$

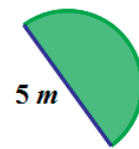
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## Lesson 18: More Problems on Area and Circumference

### Exit Ticket

1. Ken's landscape gardening business creates odd-shaped lawns that include semicircles. Find the area of this semicircular section of the lawn in this design. Use  $\frac{22}{7}$  for  $\pi$ .



2. In the figure below, Ken's company has placed sprinkler heads at the center of the two small semicircles. The radius of the sprinklers is 5 ft. If the area in the larger semicircular area is the shape of the entire lawn, how much of the lawn will not be watered? Give your answer in terms of  $\pi$  and to the nearest tenth. Explain your thinking.



10 ft.

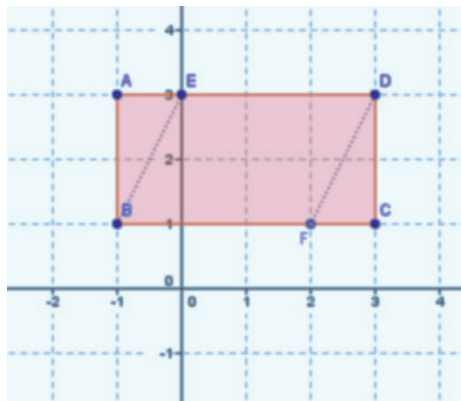
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## Lesson 19: Unknown Area Problems on the Coordinate Plane

### Exit Ticket

The figure  $ABCD$  is a rectangle.  $AB = 2$  units,  $AD = 4$  units, and  $AE = FC = 1$  unit.



1. Find the area of rectangle  $ABCD$ .
2. Find the area of triangle  $ABE$ .
3. Find the area of triangle  $DCF$ .
4. Find the area of the parallelogram  $BEDF$  two different ways.

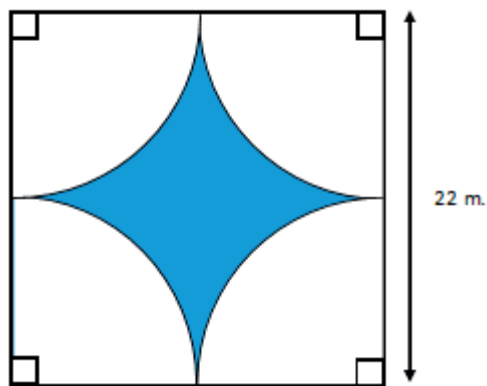
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## Lesson 20: Composite Area Problems

### Exit Ticket

The unshaded regions are quarter circles. Approximate the area of the shaded region. Use  $\pi \approx 3.14$ .



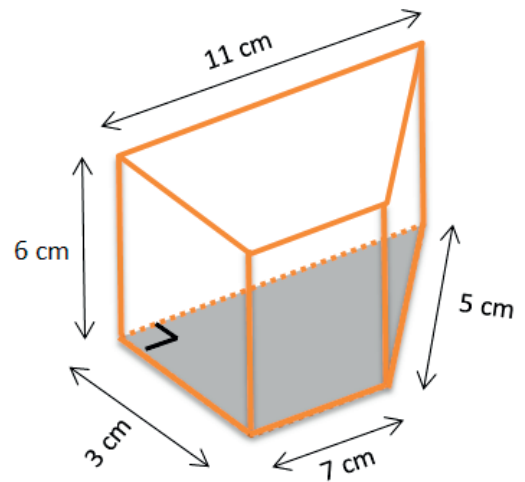
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## Lesson 21: Surface Area

### Exit Ticket

Find the surface area of the right trapezoidal prism. Show all necessary work.



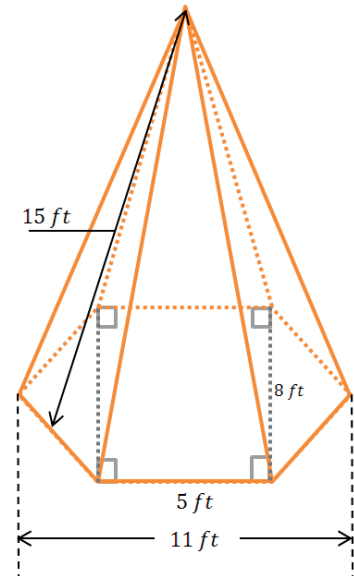
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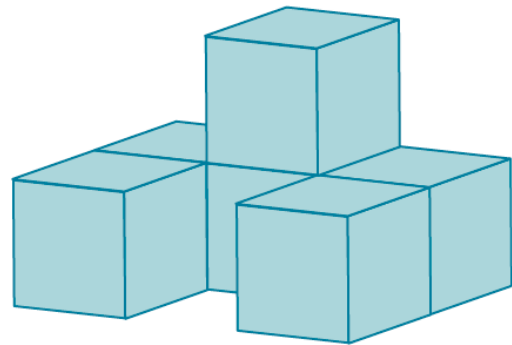
## Lesson 22: Surface Area

### Exit Ticket

- The right hexagonal pyramid has a hexagon base with equal-length sides. The lateral faces of the pyramid are all triangles (that are exact copies of one another) with heights of 15 ft. Find the surface area of the pyramid.



- Six cubes are glued together to form the solid shown in the diagram. If the edges of each cube measure  $1\frac{1}{2}$  inches in length, what is the surface area of the solid?



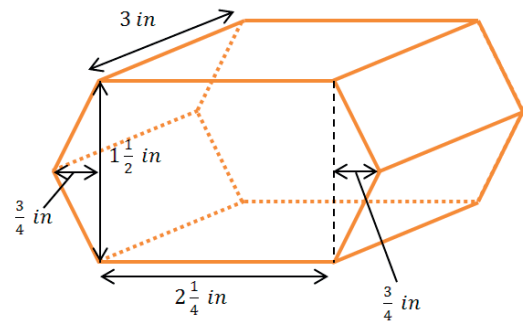
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## Lesson 23: The Volume of a Right Prism

### Exit Ticket

The base of the right prism is a hexagon composed of a rectangle and two triangles. Find the volume of the right hexagonal prism using the formula  $V = Bh$ .







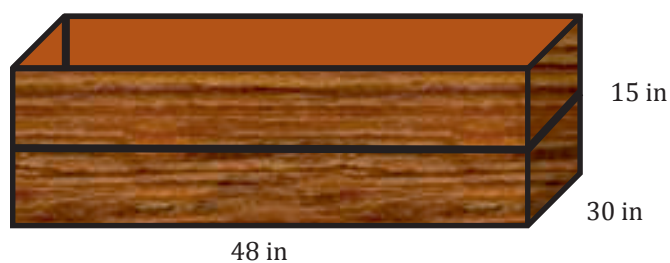
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## Lesson 25: Volume and Surface Area

### Exit Ticket

Melody is planning a raised bed for her vegetable garden.



- How many square feet of wood does she need to create the bed?
  
  
  
  
  
  
  
  
  
  
- She needs to add soil. Each bag contains 1.5 cubic feet. How many bags will she need to fill the vegetable garden?

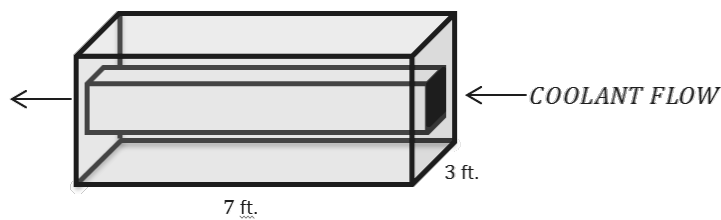
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## Lesson 26: Volume and Surface Area

### Exit Ticket

Lawrence is designing a cooling tank that is a square prism. A pipe in the shape of a smaller 2 ft  $\times$  2 ft square prism passes through the center of the tank as shown in the diagram, through which a coolant will flow.



- What is the volume of the tank including the cooling pipe?
- What is the volume of coolant that fits inside the cooling pipe?
- What is the volume of the shell (the tank not including the cooling pipe)?
- Find the surface area of the cooling pipe.