



Chapter 8 Circles and Area

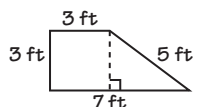
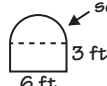
Word Magnet

1–5. Sample answers are given.

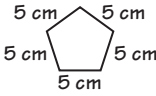
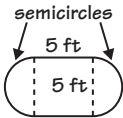
1.

	Semicircle	
One half of a circle		$C = \text{one-half the circumference of a circle with a diameter of } d$
		$= \frac{\pi d}{2}$ 
		Perimeter = one-half circumference + diameter
		$= \frac{\pi d}{2} + d$

2.

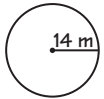
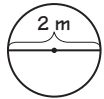
	Composite figure	
Made up of triangles, squares, rectangles, semicircles, and other two-dimensional figures		Perimeter: sum of the lengths around the figure
Example:		Example:
Perimeter = 3 + 3 + 5 + 7 = 18 feet		
		Perimeter = $\frac{\pi(6)}{2} + 3 + 6 + 3$
		= 12 + 3π
		≈ 21.42 feet

3.

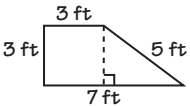
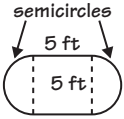
	Perimeter	
Distance around a figure		Measured in linear units, such as feet
Sum of the lengths around figure		The perimeter of a circle is called its circumference.
Example:		Example:
Perimeter = 5(5) = 25 centimeters		
		Perimeter = π(5) + 5 + 5
		= 10 + 5π
		≈ 25.7 feet

Chapter 8 (continued)

4.

Area of a circle	
π times the radius squared	$A = \pi r^2$
Diameter = 2 • radius $d = 2r$	$A = \pi \left(\frac{d}{2}\right)^2 = \frac{\pi d^2}{4}$
Example:	Example:
	
$A = \pi(14)^2 = 196\pi$ ≈ 616 square meters	$A = \frac{\pi(2)^2}{4} = \pi$ ≈ 3.14 square meters

5.

Area of a composite figure	
Made up of triangles, squares, rectangles, semicircles, and other two-dimensional figures	To find area, split up into figures with areas you know how to find. Then add the areas of those figures.
Example:	Example:
	
$A = 3^2 + \frac{1}{2}(3)(4)$ $= 15$ square feet	$A = \frac{\pi(5)^2}{4} + 5^2 = \frac{25\pi}{4} + 25$ ≈ 44.625 square feet