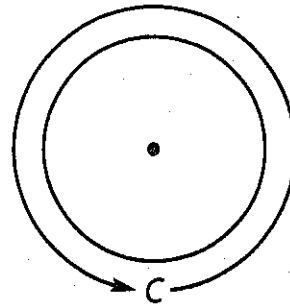


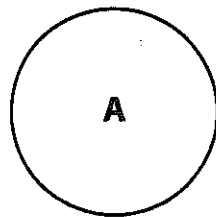
Standard 7.G.4 (L–M)

Diameter & Circumference

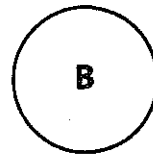
Remember, **perimeter** is the distance around a two-dimensional figure. The perimeter of a circle is called its **circumference**. The variable C often represents circumference.



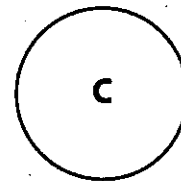
Three circles appear below. Each circle's circumference and diameter is included.



$C = 37.68$ in.
 $d = 12$ in.



$C = 26.69$ in.
 $d = 8.5$ in.



$C = 31.4$ in.
 $d = 10$ in.

Talk About It-1

- If you used each circle's circumference and diameter in the ratio $\frac{C}{d}$, what would you expect for an answer? Why?
- Find the ratio of circumference to diameter for all three circles.

	Circle A	Circle B	Circle C
$\frac{C}{d}$	$\frac{37.68 \text{ in.}}{12 \text{ in.}} = \underline{\hspace{2cm}}$	$\frac{26.69 \text{ in.}}{8.5 \text{ in.}} = \underline{\hspace{2cm}}$	$\frac{31.4 \text{ in.}}{10 \text{ in.}} = \underline{\hspace{2cm}}$

- What special name do we give to the ratio $\frac{C}{d}$?

continue to next page

Pi

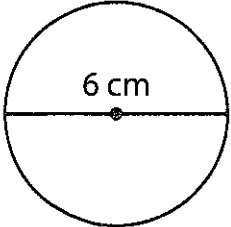
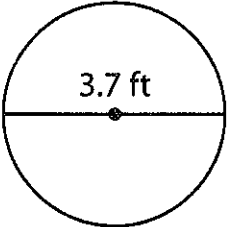
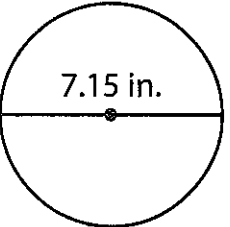
The ratio of a circle's circumference to its diameter is called pi (π). It is pronounced just like "pie." The value of π is always an approximation (e.g., 3.14, $\frac{22}{7}$) because π is an irrational number. Remember, an irrational number is a number that cannot be written as a simple fraction. Pi (π) is a decimal number that neither terminates nor repeats: 3.14159...

Finding Circumference

Knowing the value of π gives you a formula for finding the circumference of any circle. If π equals the circumference divided by the diameter, then the circumference equals π times the diameter.

$$C = \pi d$$

Try It: Find the circumference of the three circles below. Show all of your work. Use 3.14 for π .

<p>1.</p>  <p>6 cm</p> <p>Answer: _____</p>	<p>2.</p>  <p>3.7 ft</p> <p>Answer: _____</p>	<p>3.</p>  <p>7.15 in.</p> <p>Answer: _____</p>
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Talk About It-2

- What formula could you use to find the circumference of a circle if you are only given its radius? How do you know?
- How can you find the perimeter of the figure to the right? How do you know?



Standard 7.G.4 (M)

Did you say money?

Directions: Determine the circumference of each figure below. Round your answers to the nearest hundredth. Then, match each answer with a letter from the code chart that follows to answer the riddle on page 71. (Note: Use 3.14 for π .)

1. A cooking pot has a diameter of 10.4 inches. $C =$ _____
2. The radius of a pancake is 3 inches. $C =$ _____
3. A circular track has a diameter of 45 feet. $C =$ _____
4. The radius of a round area rug is 5.5 feet. $C =$ _____
5. A round pond has a diameter of 18 feet. $C =$ _____
6. A cat's circular food dish has a radius of 7.4 inches. $C =$ _____
7. The radius of a round coffee table is 3.8 feet. $C =$ _____
8. The radius of an extra-large pizza is 8 inches. $C =$ _____
9. The diameter of a wheel is 22 inches. $C =$ _____
10. The radius of a waffle is 6.5 centimeters. $C =$ _____
11. A dinner platter has a diameter of 24 inches. $C =$ _____
12. A circular window frame has a radius of 24 inches. $C =$ _____
13. The radius of a trampoline is 9.7 feet. $C =$ _____
14. The radius of a circular sink is 10 inches. $C =$ _____
15. A Ferris wheel has a diameter of 215 feet. $C =$ _____

continue to next page

Why did Charlie eat money?

Code Chart

A	C	D	E	H	I	L	M	N	O	S	T	U	W	Y
56.52	18.84	62.8	40.82	69.08	675.1	34.54	60.92	32.66	46.47	50.24	75.36	141.3	150.72	23.86

9 15 8 13 6 13 8 5 15 14 15 11

12 5 8 9 15 8 4 3 1 2 9

13 6 1 10 7