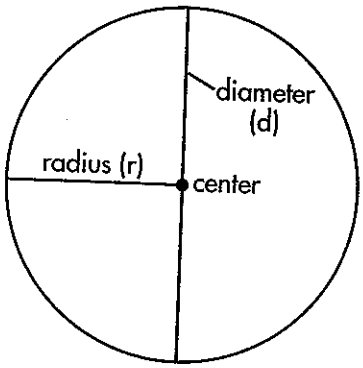
NAME _____

Lesson 11.5 Circumference of Circles

A **circle** is a set of points that are all the same distance from a given point, called the **center**. The perimeter of a circle is called the **circumference**. The **diameter** is a segment that passes through the center of the circle and has both endpoints on the circle. The **radius** is a segment that has as its endpoints the circle and the center. The relationship between the circumference (C) and the diameter (d) is $C \div d = \pi$. Pi (π) is approximately $3\frac{1}{7}$ or 3.14. To find the circumference, diameter, or radius of a circle, use the formulas $C = \pi \times d$ or $C = 2 \times \pi \times r$.



Complete the table.

	a **Diameter**	b **Radius**	c **Circumference**
1.	_____ feet	_____ feet	1.5π feet
2.	3.5 meters	_____ meters	_____ meters
3.	_____ inches	3.25 inches	_____ inches
4.	_____ yards	_____ yards	8.5π yards
5.	7.5 centimeters	_____ centimeters	_____ centimeters
6.	_____ inches	15 inches	_____ inches
7.	_____ meters	_____ meters	2.5π meters
8.	5 kilometers	_____ kilometers	_____ kilometers
9.	_____ feet	_____ feet	10π feet
10.	_____ centimeters	45 centimeters	_____ centimeters
11.	4 yards	_____ yards	_____ yards
12.	_____ miles	_____ miles	3π miles

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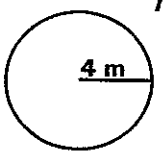
What did the groom do when his wife made him a marble cake?

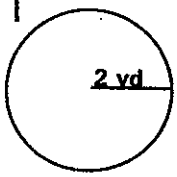
DIRECTIONS: Find the circumference of each circle described below. Then find your answer in the decoder. Each time your answer occurs in the decoder write the letter of the problem above it.

$C = \pi d$
$C = 3.14(d)$

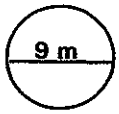
$C = 2\pi r$
$C = 2(3.14)(r)$

1. 

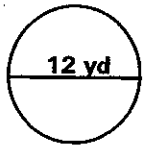
C = _____(f)

2. 

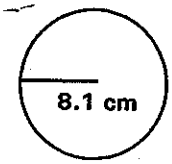
C = _____(h)

3. 

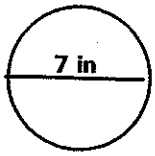
C = _____(o)

4. 

C = _____(i)

5. 

C = _____(t)

6. 

C = _____(k)

7. The radius is 5 miles. C = _____(e)

8. The diameter is 13.4 km. C = _____(a)

9. The radius is 3.75 yards. C = _____(r)

10. The diameter is 6.85 inches. C = _____(n)

11. The radius is 10.4 cm. C = _____(g)

12.56 yd	31.4 mi	50.868 cm	28.26 m	28.26 m	21.98 in	37.68 yd	50.868 cm		
25.12 m	28.26 m	23.55 mi	65.312 cm	23.55 yd	42.076 km	21.509 in	37.68 yd	50.868 cm	31.4 mi

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Lesson 11.6 Area of Circles

The area of a circle is found by using the formula $A = \pi \times r \times r$. Remember, π can be expressed as $3\frac{1}{7}$ or as 3.14. If you know the diameter of a circle, divide by 2 to find the radius.

What is the area if $r = 6$?

$A = \frac{22}{7}(6)(6)$

$A = 113\frac{1}{7}$ square units

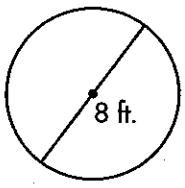
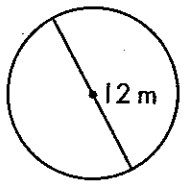
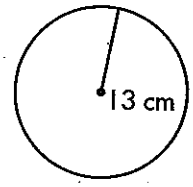
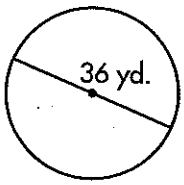
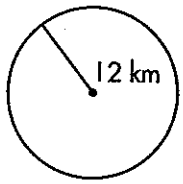
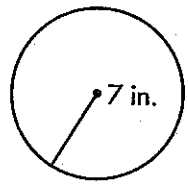
What is the area if $d = 8$?

$A = 3.14 \times \frac{8}{2} \times \frac{8}{2}$

$A = 3.14 \times 4 \times 4$

$A = 50.24$ square units

Find the area of each circle below. Use 3.14 for pi. Round your answer to the nearest tenth.

	a	b	c
1.			
	_____ square feet	_____ square meters	_____ square centimeters
2.			
	_____ square yards	_____ square kilometers	_____ square inches

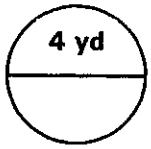
Complete the table. Use 3.14 for pi. Round your answer to the nearest tenth.

	Diameter	Radius	Area
3.	_____ inches	3 inches	_____ square inches
4.	18 feet	_____ feet	_____ square feet
5.	17 meters	_____ meters	_____ square meters
6.	_____ centimeters	32 centimeters	_____ square centimeters
7.	30 kilometers	_____ kilometers	_____ square kilometers
8.	_____ yards	6 yards	_____ square yards

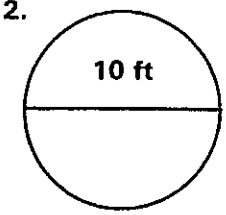
$A = \pi r^2$

Is there a word in the English language that contains all the vowels?

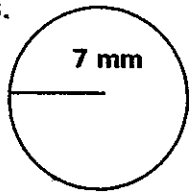
DIRECTIONS: Find the area of each circle shown. Round your answer to the nearest whole number. Then find your answer in the decoder. Each time your answer occurs in the decoder write the letter of the problem above it.

1. 

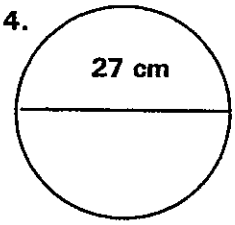
i = _____

2. 

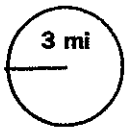
q = _____

3. 

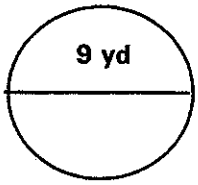
l = _____

4. 

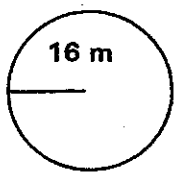
e = _____

5. 

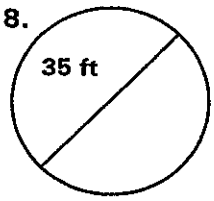
n = _____

6. 

u = _____

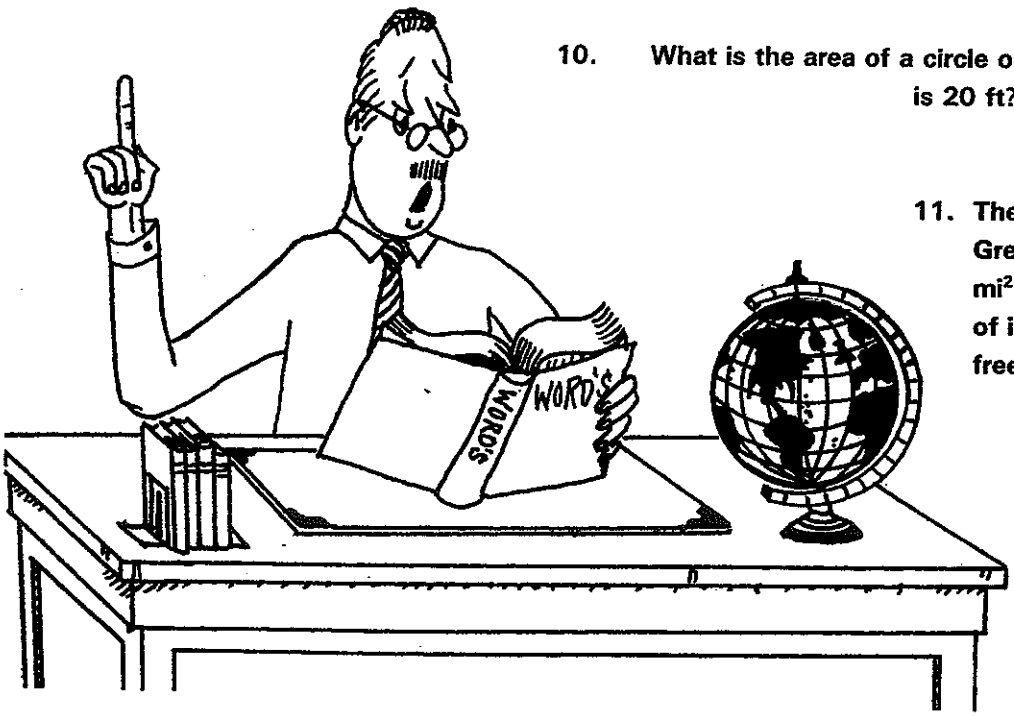
7. 

o = _____

8. 

y = _____

9. Jupiter, the largest planet in our solar system has a diameter of 88,000 miles. The diameter of the Earth is 7,926 miles. How much larger is Jupiter's diameter than the Earth? _____ = s



10. What is the area of a circle on a playground whose diameter is 20 ft? _____ = a

11. The largest island is Greenland with an area of 840,186 mi^2. However, only 16% of it is free of ice. How much of Greenland is free of ice? _____(t)

12. Mrs. Opie planned for her pond to be in the shape of a circle. She measured the diameter of the circle she had planned and found it to be 6 ft. What will be the area of her pond?
_____ = b

64 yd^2	28 mi^2	79 ft^2	64 yd^2	572 cm^2	80,074 mi	134,430 mi^2	13 yd^2	804 m^2	28 mi^2	314 ft^2	28 ft^2	154 mm^2	962 ft^2