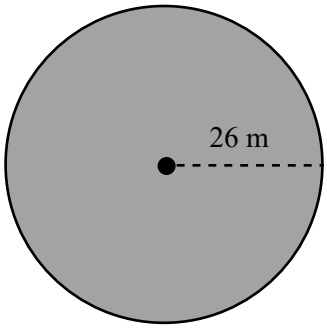
Looking Ahead

The evaluation skills you just reviewed will be put to good use when solving problems involving geometric formulas like the one below.

Example Preview

Given the following figure of a table top, how many square centimeters of paint would be required to cover the top's surface? Use $\pi = 3.14$ and round your answer to the nearest hundredth, if necessary.



Solution

To calculate how many square centimeters of paint would be required to cover the top's surface, we use the formula for the area of a circle, $A = \pi r^2$, with $r = 26$ cm.

$$\begin{aligned} A &= \pi r^2 \\ &= \pi(26 \text{ cm})^2 \\ &= \pi(676 \text{ cm}^2) \\ &\approx (3.14)(676 \text{ cm}^2) \\ &\approx 2122.64 \text{ cm}^2 \end{aligned}$$

9.R.3 Exercises

Concept Check

True/False. Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

1. A variable that does not appear to have an exponent has an exponent of 1.

2. Like terms have the same coefficients.

Practice

Simplify each expression and then evaluate the expression for $y = 3$ and $a = -2$.

3. $5y + 4 - 2y$

4. $\frac{3a + 5a}{-2} + 12a$

Applications

Solve.

5. An apartment management company owns a property with 100 units. The company has determined that the profit made per month from the property can be calculated using the equation $P = -10x^2 + 1500x - 6000$, where x is the number of units rented per month. How much profit does the company make when 80 units are rented?

6. A ball is thrown upward from an initial height of 96 feet with an initial velocity of 16 feet per second. After t seconds, the height of the ball can be described by the expression $-16t^2 + 16t + 96$. What is the height of the ball after 3 seconds?

Writing & Thinking

7. Discuss like and unlike terms and give an example of each.

8. Explain the difference between -13^2 and $(-13)^2$.