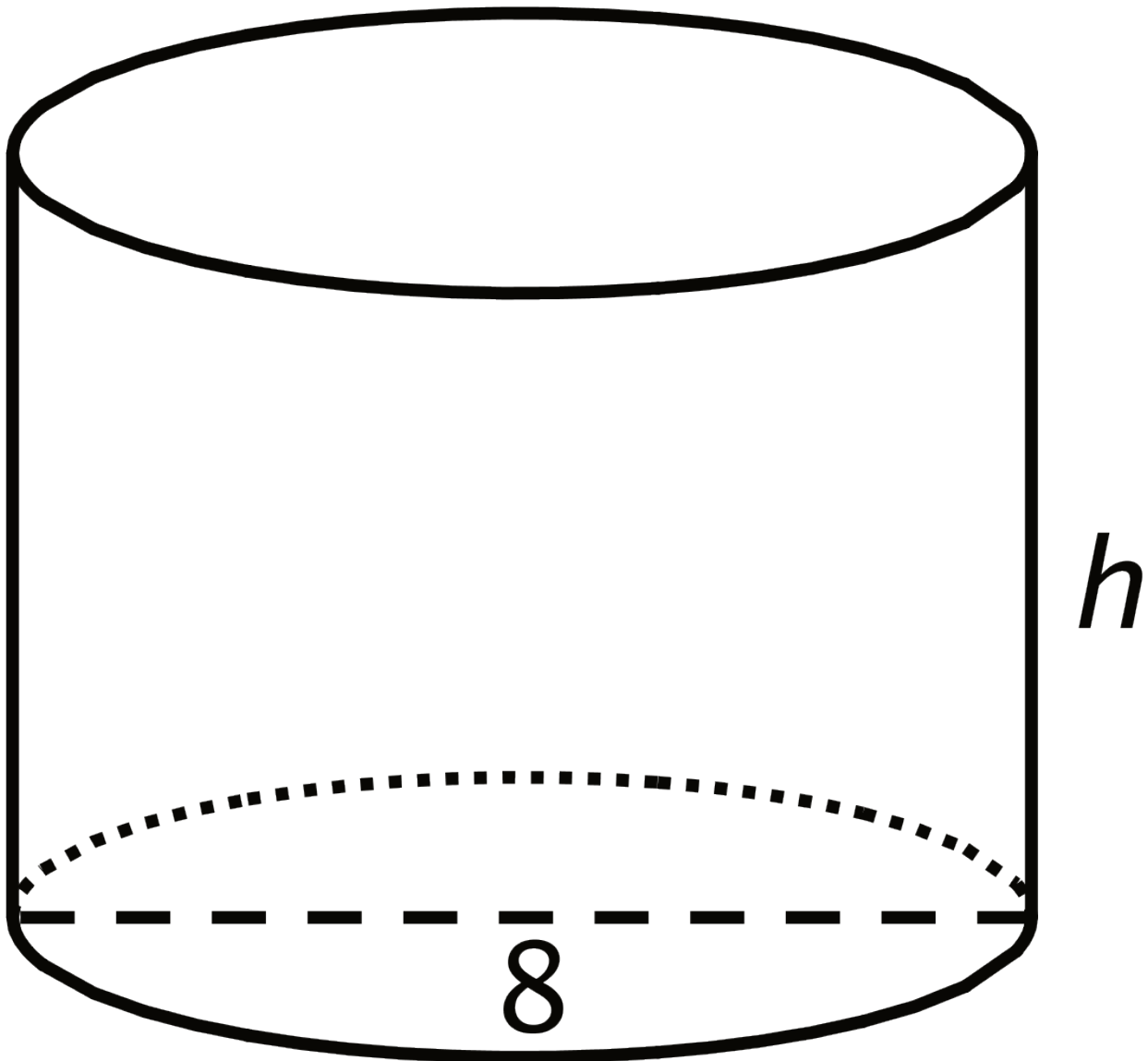


Unit 5 Lesson 14: Finding Cylinder Dimensions

1 A Cylinder of Unknown Height (Warm up)

Student Task Statement

What is a possible volume for this cylinder if the diameter is 8 cm? Explain your reasoning.



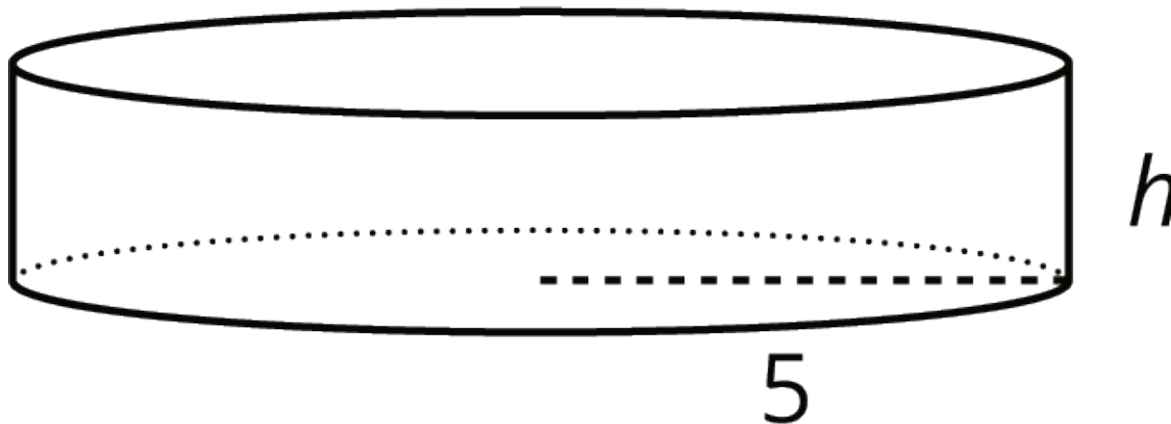
2 What's the Dimension?

Student Task Statement

The volume V of a cylinder with radius r is given by the formula $V = \pi r^2 h$.

1. The volume of this cylinder with radius 5 units is 50π cubic units. This statement is true:

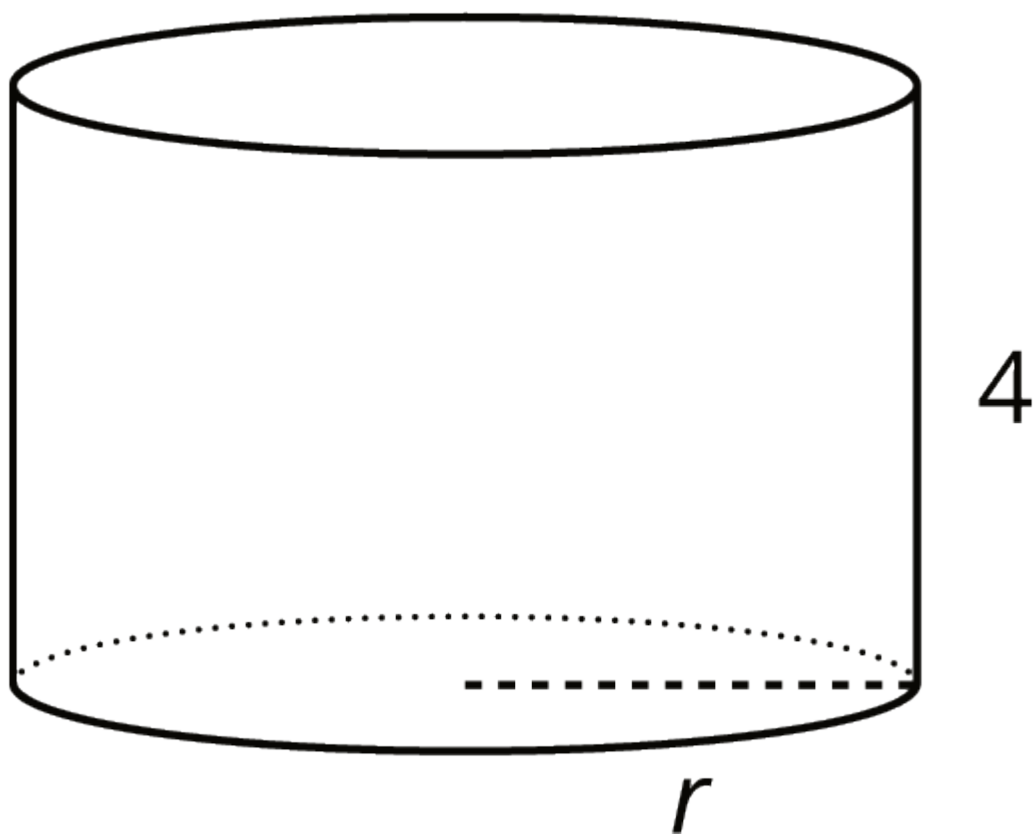
$$50\pi = 5^2 \pi h$$



What does the height of this cylinder have to be? Explain how you know.

2. The volume of this cylinder with height 4 units is 36π cubic units. This statement is true:

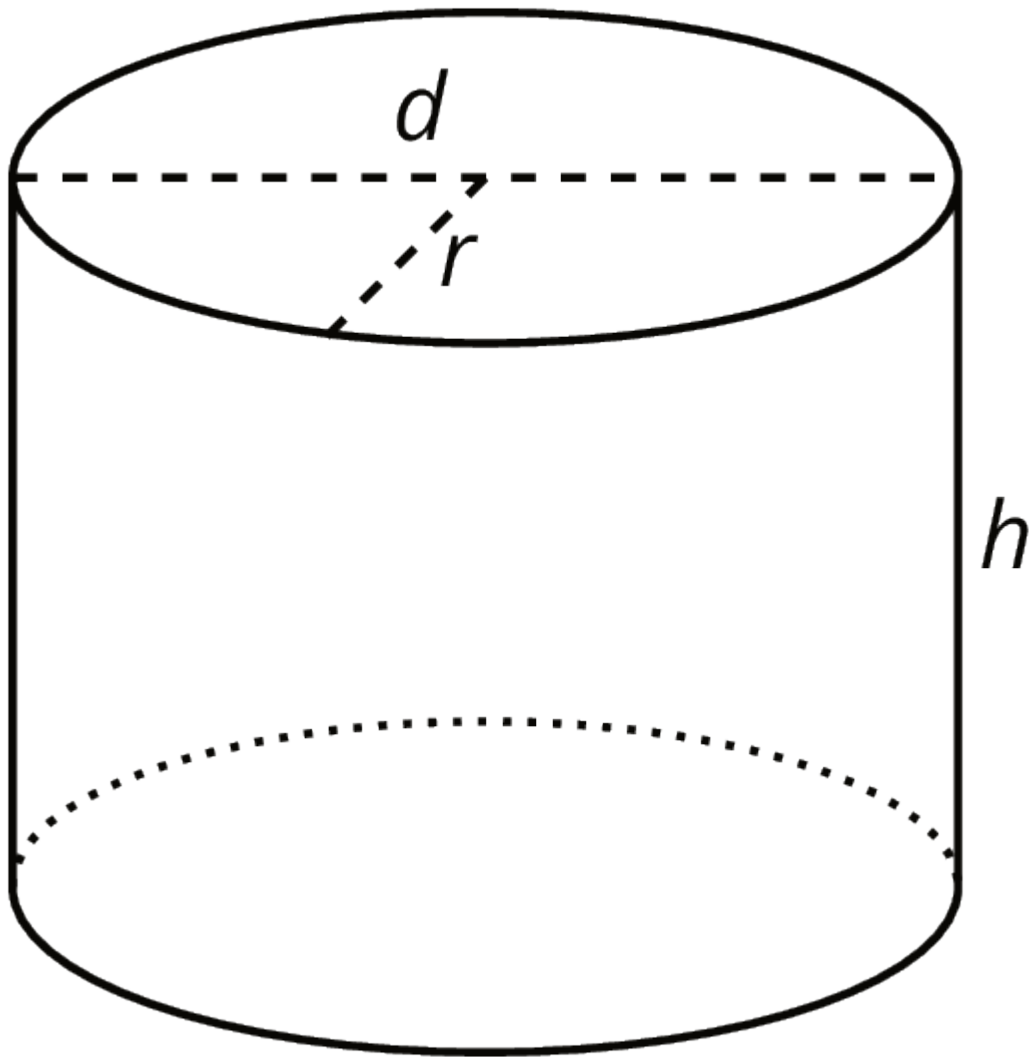
$$36\pi = r^2 \pi 4$$



What does the radius of this cylinder have to be? Explain how you know.

3 Cylinders with Unknown Dimensions

Student Task Statement



Each row of the table has information about a particular cylinder. Complete the table with the missing dimensions.

| diameter (units) | radius (units) | area of the base (square units) | height (units) | volume (cubic units) |
|---------------------|-------------------|------------------------------------|-------------------|-------------------------|
| | 3 | | 5 | |
| 12 | | | | 108π |
| | | | 11 | 99π |
| 8 | | | | 16π |
| | | | 100 | 16π |
| | 10 | | | 20π |
| 20 | | | | 314 |
| | | | b | $\pi \cdot b \cdot a^2$ |