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# WARMUP

Find the value of each expression using the given values of the variables.

**Example**  $2\pi r$  when  $r = \frac{5}{4}$

**Solution**  $2 \cdot \pi \cdot \frac{5}{4} = \left(2 \cdot \frac{5}{4}\right)\pi = \frac{5}{2}\pi$

1.  $\pi r^2$  when  $r = \frac{2}{3}\sqrt{3}$   $\frac{4}{3}\pi$

2.  $\pi r l$  when  $r = 4\frac{1}{5}$  and  $l = 15$   $63\pi$

3.  $\frac{1}{3}\pi r^2 h$  when  $r = 2\sqrt{6}$  and  $h = 4$

4.  $\frac{4}{3}\pi r^3$  when  $r = 6$   $288\pi$

$32\pi$

6.  $2\pi r^2 + 2\pi r h$  when  $r = 10$  and  $h = 6$   $320\pi$

8.  $\pi(r_1^2 - r_2^2)$  when  $r_1 = 6$  and  $r_2 = 3\sqrt{2}$

$18\pi$

