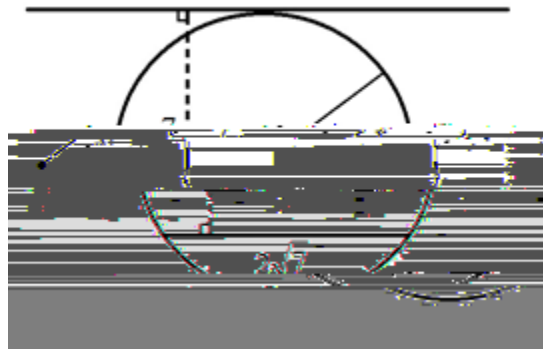


ROUND #1

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Given the figure below, find x , where x is the radius of the circle.



ROUND #2

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Solve the following system of equations. Write your solution as an ordered triplet.

$$\begin{array}{rcccc} \log_2 x & \log_4 y & \log_4 z & & 2 \\ \log_3 & \log_9 & \log_9 & & 2 \\ \log_4 & \log_{16} & \log_{16} & & 2 \end{array}$$

ROUND #4

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Consider the figure:

Suppose that A is the center of the small square, one side of the large square has length 8 units, one side of the small square is 6 units, and $BC = 4$ units. Compute the area of the shaded region

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ROUND #6

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ROUND #8

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Determine the measure of angle shown in the figure below between the hands of an analog clock at 4:42.





ROUND #10

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A smaller cylinder of radius r rolls without slipping, in the counter clockwise direction, on a larger cylinder of radius R with center O , as shown in the figure below. If $R = 3$ meters and $r = 1$ meter, how many complete rotations does the smaller cylinder undergo as it makes one complete transit around the larger cylinder?

