

Name _____

Date _____

Area and Circumference of a Circle - Guided Lesson Explanation:

Explanation#1

First we calculate area of square : $\text{area of square} = \text{side}^2$

side = 20"

area of square = 20^2

area of square = 20×20

area of square = 400"

Now we calculate area of circle

area of circle = πr^2

$\pi = 3.14$, Diameter = 20" , Radius = ?

Radius = $20 \div 2$

Radius = 10"

area of circle = 3.14×10^2

area of circle = $3.14 \times 10 \times 10$

area of circle = 314"

Time to calculate the amount of plywood that would be left over.

area of square - area of circle

$400'' - 314''$

86"

Answer is = 86 square feet



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Explanation#2

The ends of the track are two semicircles, which would form one circle with a diameter of 80m. We are also left with the 80 m x 120 m rectangular portion of the track which would account for a portion of the perimeter. So the total perimeter would be equal to the perimeter of the circle + the rectangle.

Step 1) First we calculate perimeter of circle

$$\text{Perimeter of circle} = 2\pi r$$

$$\pi = 3.14, \text{ Diameter} = 80\text{m}, r = ?$$

$$r = 80 \div 2$$

$$r = 40\text{m}$$

$$\text{Perimeter of circle} = 2 \times 3.14 \times 40$$

$$\text{Perimeter of circle} = 251.2 \text{ meters}$$

Step 2) Now we calculate perimeter of rectangle

$$\text{Perimeter of rectangle} = 2 (\text{length} + \text{base})$$

$$\text{Perimeter of rectangle} = 2 (120 + 80)$$

$$\text{Perimeter of rectangle} = 2 \times 200$$

$$\text{Perimeter of rectangle} = 400 \text{ meters}$$

Step 3) Let's determine the perimeter of the inside of the track.

$$\text{Perimeter of circle} + \text{Perimeter of rectangle}$$

$$251.2 + 400$$

$$\text{Perimeter of the inside of the track} = 651.2$$

Answer is : 651.2m



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Explanation#3

The circumference is 15 cm

Circumference = π x diameter

$$\pi = 3.14$$

Replace C with 15 in the formula.

$$15 = 3.14 \times d$$

$$15 \div 3.14 = d$$

$$d = 4.77$$

The Answer is $d = 4.77\text{m}$

