key

A **composite figure** is made up of triangles, squares, rectangles, semicircles, and other two-dimensional figures. Here are two examples.

square   triangle

rectangle   semicircle
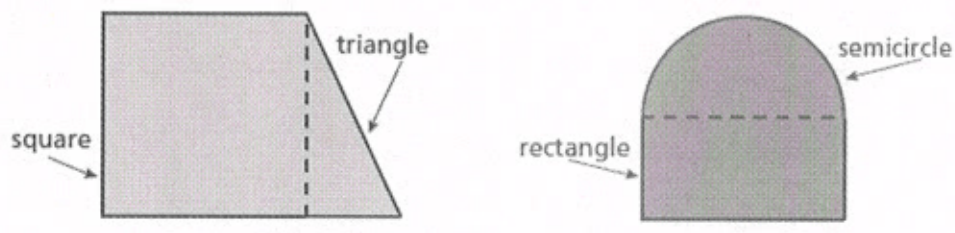
To find the perimeter of a composite figure, find the distance around the **outside** of the entire figure.

Example 1: The figure is made up of a semicircle and a triangle. Find the perimeter.

The distance around the triangular part of the figure is 6 + 8 = 14 feet.

The distance around the semicircle is one-half the circumference of a circle with a diameter of 10 feet. Round to the nearest hundredth.

8 ft   10 ft   6 ft
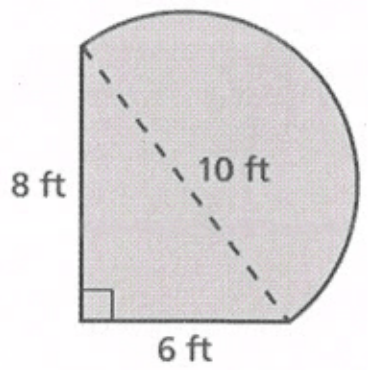
$C = \dfrac{\pi d}{2}$ Divide the circumference by 2.

$C = \dfrac{\pi 10}{2}$ Substitute 10 for d.

$C \approx 15.707$ Multiply π by 10 and then divide by 2.
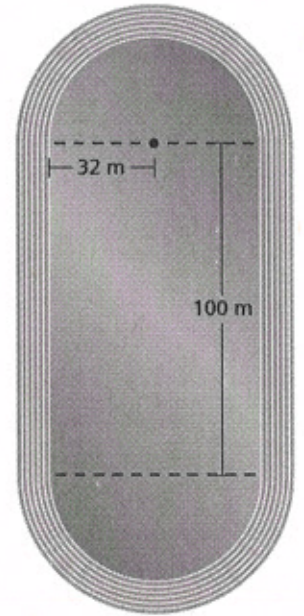
$C \approx 15.71$ Round to the nearest hundredth.

So, the perimeter is about 14 + 15.71 ≈ 29.71 feet.

Example 2: The running track is made up of a rectangle and two semicircles. Find the perimeter. Round to the nearest hundredth.

The semicircular ends of the track form a circle with a radius of 32 meters. Find its circumference.
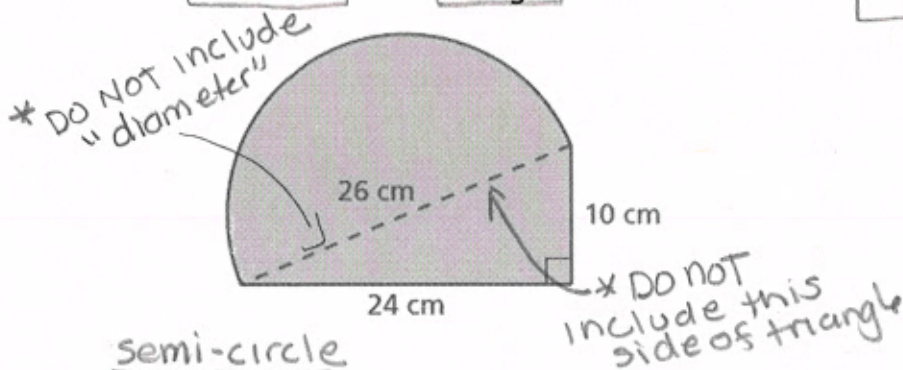
$C = 2\pi r$	Write formula for circumference.
$C \approx 2 \cdot \pi \cdot 32$	Substitute 32 for r.
$C \approx 201.061$	Multiply.
$C \approx 201.06$	Round to the nearest hundredth.

So, the perimeter is about 100 + 100 + 201.06 ≈ 401.06 meters.

32 m

100 m

Try These: Find the perimeter of each figure. Round to the nearest hundredth.

c. The figure is made up of a semicircle and a triangle.

* DO NOT include "diameter"

26 cm

10 cm

24 cm

✳ DO NOT include this side of triangle

semi-circle

$P = \dfrac{\pi d}{2}$

$P = \dfrac{\pi(26)}{2}$

$P \approx 40.84\cancel{0}$

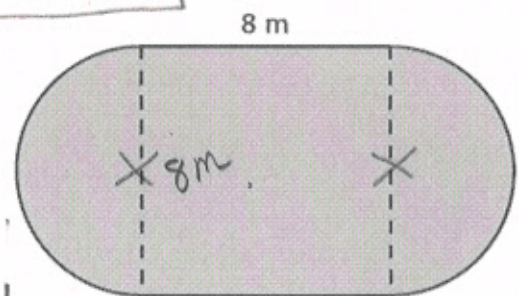$P \approx 40.84$ cm

Triangle

$P = \text{side} + \text{side}$

$P = 24 + 10$

$P = 34$ cm

Total Perimeter = 40.84 + 34

= 74.84 cm

d. The figure is made up of a square and two semicircles.

8 m

✗ 8m ✗

I full circle

$P = \pi d$

$P = \pi(8)$

$P \approx 25.13\cancel{6}$

$P \approx 25.13$ m

Square (2 sides only)

$P = \text{side} + \text{side}$

$P = 8 + 8$

$P = 16$ m

Total Perimeter = 25.13 + 16

= 41.13 m