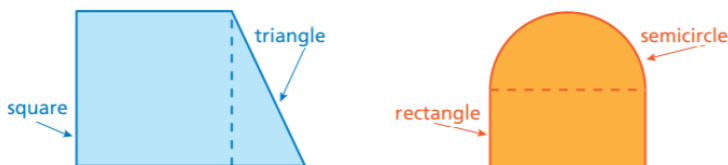


Lesson 13.2:

Perimeters of Composite Figures

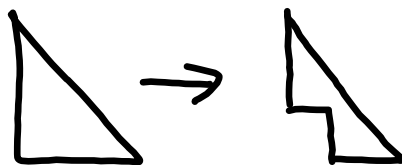
Key Idea

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

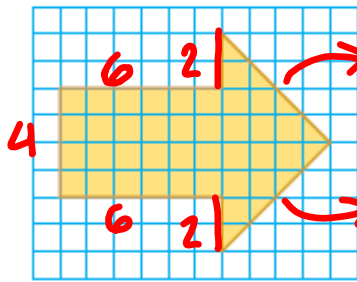


To find the perimeter of a composite figure, find the distance around the figure.

*Can also be formed by "subtracting" one 2-D figure from another



Estimate the perimeter of the arrow. Approximate the diagonal length to be 1.5.



$$1.5 \cdot 4 = 6$$

$$1.5 \cdot 4 = 6$$

$$4 + 6 + 2 + 6 + 6 + 2 + 6$$

$$10 + 14 + 8$$

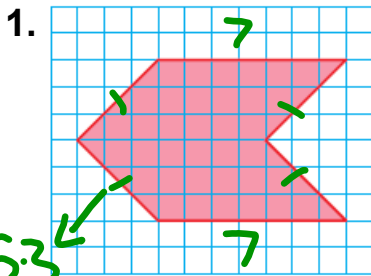
$$10 + 22$$

Count: We have 7 sides.

(easy to miss the 2 sides)

$$\boxed{32}$$

Estimate the perimeter of the figure.

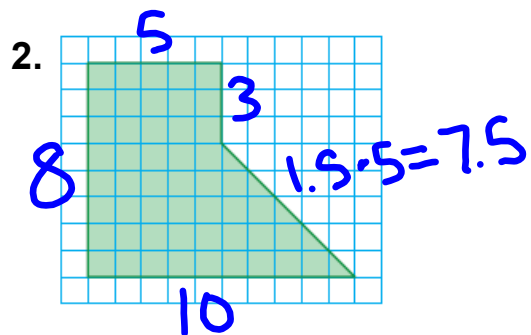


$$1.5 \cdot 3 = 4.5$$

$$2(7) + 4(4.5)$$

$$14 + 18$$

$$\boxed{32}$$



$$1.5 \cdot 5 = 7.5$$

$$10 + 7.5 + 3 + 5 + 8$$

$$20.5 + 13$$

$$\boxed{33.5}$$

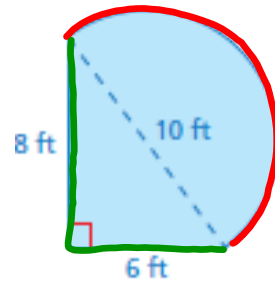
The figure is made up of a semicircle and a triangle. Find the perimeter.

$$\frac{1}{2} \pi d = \frac{1}{2} \cdot 3.14 \cdot 10 \text{ ft} = 15.7 \text{ ft}$$

↳ don't include "+d"

$$8 \text{ ft} + 6 \text{ ft} = 14 \text{ ft}$$

$$15.7 \text{ ft} + 14 \text{ ft} = \boxed{29.7 \text{ ft}}$$



The running track is made up of a rectangle and two semicircles. Find the perimeter.

2 curved parts of \cong semi-circles

→ 1 circumference

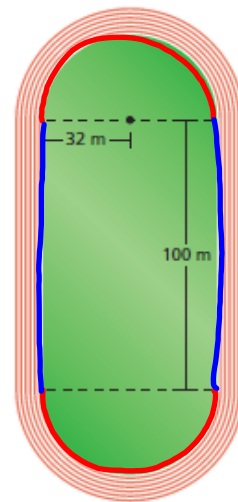
Only 2 sides of rectangle

$$2\pi r + 2l$$

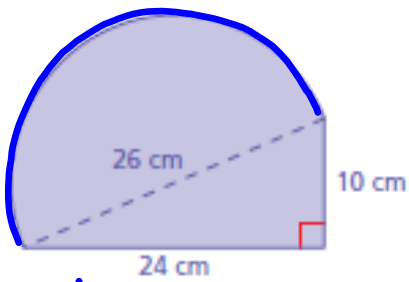
$$2 \cdot 3.14 \cdot 32 \text{ m} + 2 \cdot 100 \text{ m}$$

$$200.96 \text{ m} + 200 \text{ m}$$

$$\boxed{400.96 \text{ m}}$$



3. The figure is made up of a semicircle and a triangle. Find the perimeter.



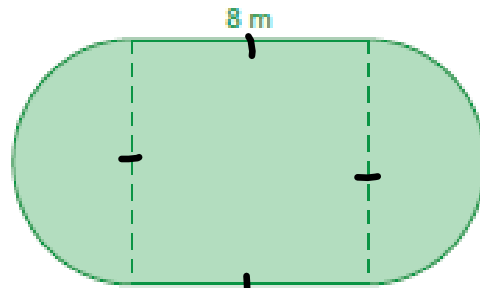
$$\frac{1}{2}\pi d + 24\text{cm} + 10\text{cm}$$

$$\frac{1}{2} \cdot 3.14 \cdot 26\text{cm} + 34\text{cm}$$

$$40.82\text{cm} + 34\text{cm}$$

$$\boxed{74.82\text{cm}}$$

4. The figure is made up of a square and two semicircles. Find the perimeter.



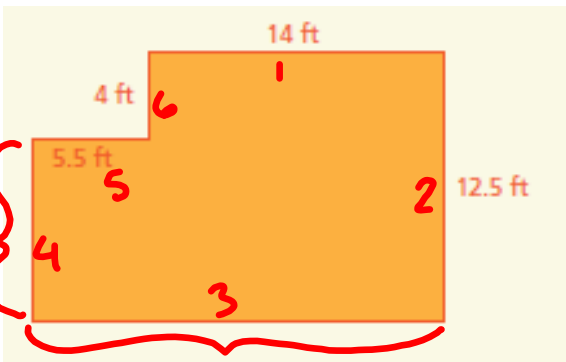
$$2 \cdot \frac{1}{2}\pi d + 8\text{m} + 8\text{m}$$

$$3.14 \cdot 8\text{m} + 16\text{m}$$

$$25.12\text{m} + 16\text{m}$$

$$\boxed{41.12\text{m}}$$

Find the perimeter of the room shown.



Count: 6 sides

$$14 + 12.5 + 19.5 + 8.5 + 5.5 + 4$$

$$5.5' + 14' = 19.5'$$

$$12.5' - 4' = 8.5'$$

$$\boxed{64\text{ feet}}$$