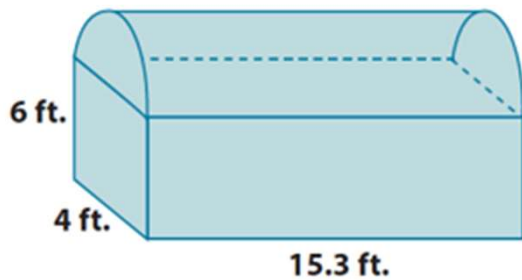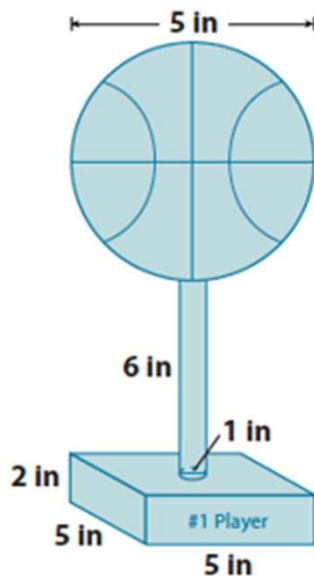# Volume of Composite Solids

1. What is the approximate volume of the chest shown above? Use 3.14 for an approximation of π. Round your final answer to the tenths place.
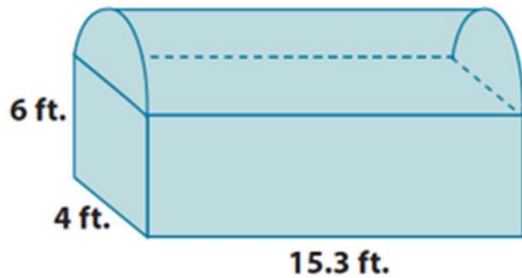

6 ft.

4 ft.

15.3 ft.

2. Every part of the trophy shown is solid and made out of silver. How much silver is used to produce one trophy? Give an approximate answer rounded to the hundredths place.

5 in

6 in

1 in

2 in

5 in

#1 Player

5 in

5 in

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Volume of Composite Solids

1. What is the approximate volume of the chest shown above? Use 3.14 for an approximation of π. Round your final answer to the tenths place.

6 ft.

4 ft.

15.3 ft.

The rectangular prism at the bottom has the following volume:

$V = 4 \times 15.3 \times 6 = 367.2.$

The half-cylinder top has the following volume:

$$V = \frac{1}{2}\left(\pi(2)^2(15.3)\right)$$
$$= \frac{1}{2}(61.2\pi)$$
$$= 30.6\pi$$
$$\approx 96.084.$$

$367.2 + 96.084 = 463.284 \approx 463.3$

The total volume of the chest shown is approximately $463.3 \ ft^3$.

2. Every part of the trophy shown is solid and made out of silver. How much silver is used to produce one trophy? Give an approximate answer rounded to the hundredths place.

5 in

6 in

1 in

2 in

5 in

#1 Player

5 in
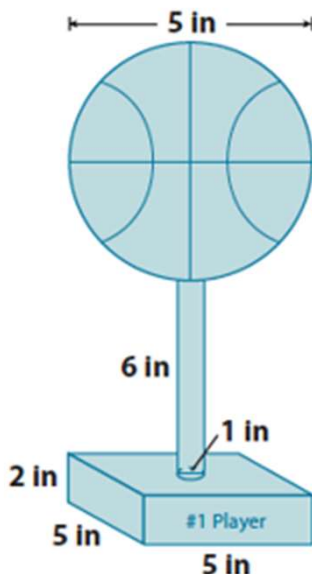
The volume of the rectangular base is
$$V = 5 \times 5 \times 2$$
$$= 50.$$

The volume of the cylinder holding up the basketball is

$$V = \pi\left(\frac{1}{2}\right)^2 (6)$$
$$= \frac{1}{4}\pi(6)$$
$$= \frac{3}{2}\pi$$
$$\approx 4.71.$$

The volume of the basketball is

$$V = \frac{4}{3}\pi(2.5)^3$$
$$= \frac{4}{3}\pi(15.625)$$
$$= \frac{62.5}{3}\pi$$
$$\approx 65.42$$

The approximate total volume of silver needed is $50 \ in^3 + 4.71 \ in^3 + 65.42 \ in^3$, which is $120.13 \ in^3$

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