Math Study Strategies

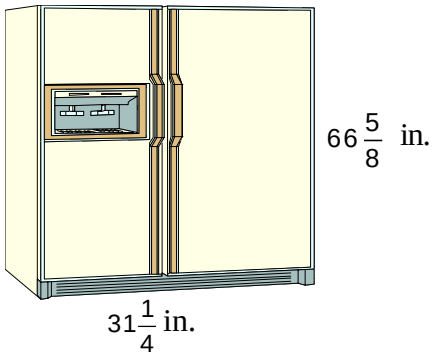
Math for Air Conditioning and Refrigeration

Capacity of Refrigerators

The capacity of refrigerators and freezers is expressed in terms of cubic feet. This is a measurement of the volume of the inside portion of the appliance. The capacity shows how much food can be stored inside the refrigerator or freezer.

The outside dimensions of refrigerators and freezers are shown on a sticker on the inside of the doors. The refrigerator shown is:

$66\frac{5}{8}$ inches in height, $35\frac{3}{4}$ inches wide, $31\frac{1}{4}$ inches deep, and its capacity is 23.5 cubic feet.



Keep Fresh Refrigerator

- 23.5 cu ft
- $66\frac{5}{8}$ in. high
- $35\frac{3}{4}$ in. wide
- $31\frac{1}{4}$ in. deep

Features:

- frostfree
- side freezer

Use the dimensions of the refrigerator to find its total volume. Compare this figure to the capacity shown on the sticker. How much of the refrigerator is needed for coolant and machinery?

To find the volume of the refrigerator, use the formula $V = lwh$.

$$V = 66\frac{5}{8}(35\frac{3}{4})(31\frac{1}{4})$$

$V = 74,433$ cubic inches

Change the cubic inches to cubic feet.

$74,433 \div 1,728 = 43.07$ cubic feet of capacity

To find out how much space is needed for coolant and machinery, subtract the capacity volume on the sticker (23.5) from the total volume of the refrigerator (43.07).

$43.07 - 23.5 = 19.57$

The coolant and machinery need 19.57 cubic feet of space.