



Task Title: Calculate Volumes of Concrete Required

OALCF Cover Sheet – Learner Copy

Learner Name: _____

Date Started: _____

Date Completed: _____

Successful Completion: Yes No

Goal Path: Employment Apprenticeship

Secondary School Post Secondary Independence

Task Description: Carpenters calculate volumes of window sills, thrust blocks and columns to determine the amount of concrete required.

* Tasks 1, 3, & 4 'C3' tasks are higher than Level 3 OALCF

* Task 3 has been identified as authentic to this particular trade and may need some prior knowledge of the trade to complete.

Main Competency/Task Group/Level Indicator:

- Find and Use Information/Interpret documents/A2.1
- Understand and Use Numbers/Use measures/C3.3
- Understand and Use Numbers/Manage data/C4.1

Materials Required:

- Pen/pencil and paper and/or digital device
- Calculator or digital device with calculator function

Learner Information

The carpenter calculates the volume (V) of concrete required for building objects.

For square or rectangular objects:

$V = L \times W \times D$, where V = volume, L = length, W = width and D = depth.

For round objects:

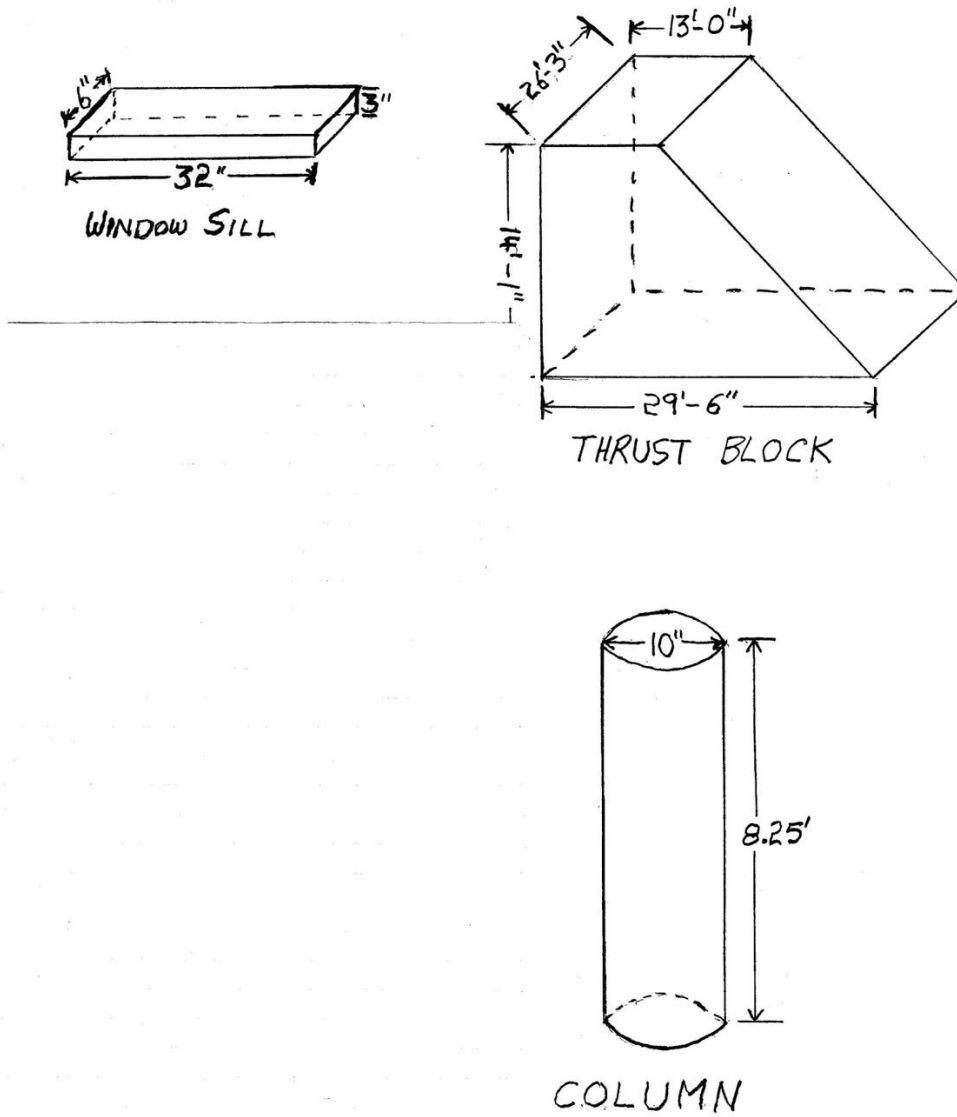
$V = \pi r^2 \times H$, where V = volume, $\pi = 3.14$, r = radius of circle* and H = height

* Radius is $\frac{1}{2}$ of the diameter (diameter = distance across the circle)

1 cubic foot = 0.037 cubic yard

Review the Concrete Building Objects Diagrams.

Concrete Building Objects Diagrams



Work Sheet

Task 1: Calculate the volume (V) of concrete required for the window sill in cubic feet (ft³).

Answer:

Task 2: A garage floor measures 12' 6" by 13.75'. The concrete pad will be 4" deep. The cement truck contains 1 cubic yard of concrete. Will you need to order more concrete to complete the garage floor? Concrete can be ordered by ½ and full cubic yards.

Answer:

Task 3: Calculate the volume of concrete required for the thrust block, in cubic yards (yd³). The thrust block is an odd shape. Consider it as a rectangle (13' x 14' 1" x 26' 3") plus half of another rectangle ((29' 6" - 13') x 14' 1" x 26' 3").

Answer:

Task 4: Calculate the volume of concrete required for 8 columns, in cubic yards (yd³); 1 ft³ = 0.037 yd³.

Answer:
