Calculating Concrete Volume

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Description:

How to calculate concrete volume for ordering concrete.

## What’s in the Box?

### Materials:

None.

### Tools:

100’ tape (or 25’ tape)

## Introduction

Volume is length X width x thickness. For a simple driveway that is 40’ long by 20’ wide by 4” thick the calculation is as follows:

All units need to be in feet so first convert 4 inches to feet by dividing by 12 (inches/foot). 4 ÷ 12 = .33

Now compute the volume in **cubic** feet.

40’ X 20’ X .33’ = 264 cubic feet.

However we order concrete by the **cubic yard**. A cubic yard = 27 cubic feet. To convert divide the cubic feet by 27 (cubic feet/yard).

264 cu.ft. ÷ 27 = 9.77 cubic yards.

Typically we would round up to 10 cubic yards to allow for waste. If concrete costs $100/cu yard then the cost would be $1000

10 cu yards X $100/Cu Yard = $1000

## Practice

Compute the cu. feet, cubic yards, and the cost for a sidewalk that is 6’ wide X 40’ long and 4” thick. Assume concrete costs $100/cu yard. (First try this on your own but the answer is at the end of the worksheet.)

Cubic Feet= \_\_\_\_\_\_\_\_\_

Cubic Yards = \_\_\_\_\_\_\_\_

Cost = \_\_\_\_\_\_\_\_

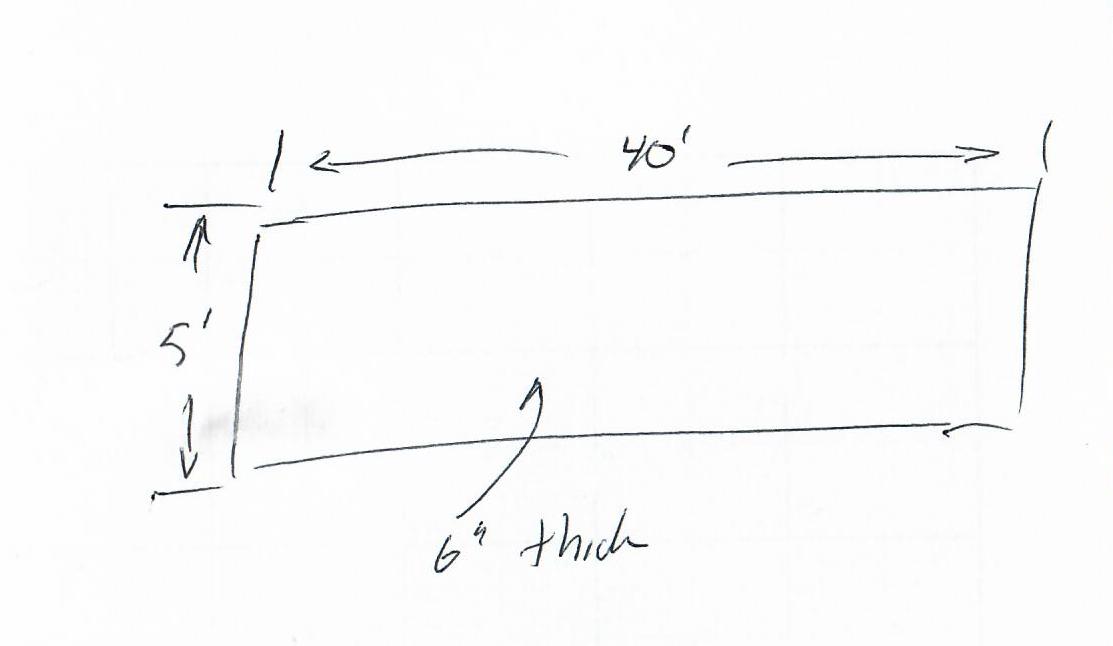
## Procedure:

Determine the concrete cost to replace an existing concrete slab. Remember that the hardest part of this task is keeping the units straight.

Unit conversions:

1 foot = 12 inches

1 cubic yard = 27 cubic feet

1. Find a sidewalk section or a driveway. To keep things simple choose a rectangular shape. Make a sketch on your worksheet. (See example below.) 
2. Using the tape measure the dimensions. Record these on your work sheet as part of your sketch.
3. Compute the cubic feet, cubic yards, and cost. Assume that concrete cost $100/yd.
4. Repeat 1-3 at another location.

## Worksheet

1. Describe the first location (ex. sidewalk at the park). \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. Make a neat sketch of the concrete.
   2. Compute the cubic feet required to pour the slab. Show your work.

\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Compute the cubic yards required to pour the slab. Show your work.

\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Compute the cost of the concrete. Show your work.

\_\_\_\_\_\_\_\_\_\_\_\_

1. Describe the second location (ex. sidewalk at the park). \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. Make a neat sketch of the concrete.
   2. Compute the cubic feet required to pour the slab. Show your work.

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* 1. Compute the cubic yards required to pour the slab. Show your work.

\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Compute the cost of the concrete. Show your work.

Practice Answers

6’ X 40’ x .33’ (don’t forget to convert inches to feet) = 80 cubic feet

80 cubic feet ÷ 27 (cu feet/cu yard) = 2.96 cu yards -> round up to 3.

3 cubic yards X $100/cu yard = $300.