Classroom Activity: Building Math Skills Sample Equations

Question #1

In measuring most areas, we have two measurements we use, known as SF & SQ units:

- 1 SF = square foot which is equal to 12"x 12" = 1 SF
- 1 SQ = 10' x 10'= 100 SF which = 1 SQ

We have a gable roof to order shingles for and it has two sides to be done. Each
side measures 30' wide and has a slope of 20'. The shingles come in bundles. 4 bundles = 1 SQ

a) How many SQ is the combined roof surface?
b) How many bundles of shingles will be required for the roof?

Question #2

When ordering concrete, we order it by the cubic yard (Cubic Yard= CY) 1 CY = 3'x3'x3' = 27 cubic feet.
When ordering concrete for a footing and foundation, we have two areas of measurement to calculate. We
have our foundation wall (8" thick x 9' tall x length) and our footing (1' 4" wide x 8" tall x length). Review
the dimensions given to find the total amount of CY of concrete required to pour both the footing and
foundation wall.

We have a foundation that measures 130' in total length by 9' tall. The foundation sits on an 8"x16" (.88 CF)
footing for the entire length as well.

When looking at this situation you will have some conversions to make as you work through it. First, you will
measure the wall surface in SF. Then, you will do the same for the footing. Last, take the measurement of
each and multiply that by how many linear feet of footing and foundation wall there will be. After you have
found the total cubic feet of those two items, you will have to convert that into a cubic yard measurement.

a) How many CY of concrete is needed for the foundation wall?
b) How many CY of concrete is needed for the footing?
c) What is the total CY of concrete required for the foundation wall and footing?
d) What is the total CY of concrete with 10% waste factor to be ordered for the project?