Mathematical Tasks

Packing Shoe Crates

An athletic shoe company is evaluating how they pack their athletic shoes that they ship to stores.

Part 1:
Find the volume of each shoe box. Explain how you found your answers.
There are 3 sizes of shoe boxes:
Box A: 5 ¼" by 5 ½" by 8"
Box B: 5 ¼" by 5 ½" by 12"
Box C: 5 ¼" by 5 ½" by 4"

Part 2:
The company packs boxes in shoe crates that are rectangular prisms. Each crate contains only 1 type of shoe box. Also each crate has 32 boxes on each layer and has 5 layers of boxes. How many boxes are in each crate? Write an equation and explain how you found your answer.

Part 3:
What is the volume of a crate of Box A shoes? What is the volume of a crate of Box B shoes? What is the volume of a crate of Box C shoes? Explain how you found your answer.

Part 4:
What relationship do you notice between the volume of Box C compared to the volumes of Box A and B? Hint: Look at the dimensions in Part 1.