Answer on Question #81796 – Math – Geometry

Question

The daycare has two sandboxes that are both prisms with regular hexagons as bases. The smaller sandbox has a base area of 1,146 inches square and is filled 10 inches deep with sand. If it took 14 bags to fill up the sandbox 10 inches, what volume of sand comes in one bag?

Solution

Volume of the smallest sandbox it's just multiplication of its height (10 inches) and a base area (1,146 inches^2) because the sandbox is a prism in our case:

$$V1 = 1,146 * 10 = 11460 \text{ inches}^3$$

If it took 14 bags to fill up the sandbox we can calculate what volume of sand comes in one bag just by dividing Volume of the sandbox by 14:

$$V2 = V1 / 14 = 11460 / 14 = 5730 / 7 = 818.57 \ \text{ inches}^3$$

Answer: V2 = 5730 / 7 inches^3.