Answer on Question #69368 – Math – Algebra

Question

The pickling company want to make 1400 liters of a 6% brine(salt) solution by mixing a 15% brine solution with water. How much of each should be used to accomplish this?

Solution

1400 liters of a 6% brine solution consist of $1400 \cdot 0.06 = 84$ liters of brine and

$1400 - 84 = 1316$ liters of water.

Then a 15% brine solution will contain the same amount of brine, that is, 84 liters of brine.

It follows from the proportion

$$84 \text{ liters} - 15\%$$

$$x \text{ liters} - 100\%$$

that we need

$$x = \frac{84 \cdot 100}{15} = 560 \text{ liters of a 15% brine solution}$$

which contain

$$x - 84 = 560 - 84 = 476 \text{ liters of water.}$$

Therefore, we need to mix 560 liters of a 15% brine solution with

$1316 - 476 = 840$ liters of water.

Answer: 560 liters of a 15% brine solution and 840 liters of water.