(18) Almonds #6 per pound
Walnuts #5.20 per pound
Mixture 30 lbs
Total cost of Mixture is #165

How many Pounds of almonds and Walnuts should be mixed to get a Mixture cost of #165 ??

Let x = no. lbs almonds

almonds	Walnuts	Mixture
x	30 − x	30

Note: The cost of the almonds plus the cost of the Walnuts when Mixed together Must add up to #165

(cost of almonds) + (cost of Walnuts) = (cost of Mixture)

$6x + 5.20(30-x) = 165$ ← given in problem

$6x + 156 - 5.20x = 165$

$6x - 5.20x = 165 - 156$

$0.80x = 9$

$\frac{0.80x}{0.80} = \frac{9}{0.80}$

$x = 11.25$ lbs of almonds

$30 - x = 30 - 11.25 = 18.75$ lbs of Walnuts

J.B. Must Mix 11.25 lbs of almonds with 18.75 lbs of Walnuts to get a Mixture of ALMONDS AND WALNUTS That cost a Total of #165.

#22 (1) Teacher needs a 5% sulfuric acid solution.
(2) He/She has only 8 oz. of a 25% sulfuric acid solution
(3) He decides to make a 5% sulf. acid soln by adding water to the 25% sulf. acid soln

How much water must be add?

25% soln	+	Water	=	5% soln
8	+	x	=	8+x

(amt of sulf. acid) + (amt of sulf. acid) = (amt of sulf. acid)

$0.25(8) + 0(x) = 0.05(8+x)$

$2 = 0.05(8) + 0.05x$

$2 = 0.4 + 0.05x$

$2 - 0.4 = 0.05x$

$1.6 = 0.05x$

$\frac{0.05x}{0.05} = \frac{1.6}{0.05}$

$x = 32$ ounces ✓

The teacher must add 32 ounces of water to the 25% solution to get a 5% sulfuric acid solution.

Similar to 21

(22) David Has 2500 gal. of Hydrogen Peroxide: 60% pure hydrogen peroxide

How much distilled Water (0% hydrogen peroxide) will david need to add to this solution to create a new solution that is 25% pure hydrogen peroxide

60% soln	+	water	=	25% soln
2500	+	X	=	2500+X

(amt of pure Hyd. perox.)	+	(amt of Pure Hydrogen Peroxide)	=	(amt of Pure Hyd. Perox.)

Let X be the amt of water added to the 60% solution.

$0.60(2500) + 0(X) = 0.25(2500+X)$

$1500 + 0 = 0.25(2500) + 0.25X$

$1500 = 625 + 0.25X$

$1500 - 625 = 0.25X$

$875 = 0.25X$

$\frac{0.25X}{0.25} = \frac{875}{0.25}$

$X = 3,500 \text{ gal}$

David added 3,500 gal of distilled water to the 60% solution

(26)

Table Vinegar 5% Soln	+	Pickling Vinegar 15% Soln	=	13% Soln
X	+	2 cups	=	X+2 cups

$0.05X + 0.15(2) = 0.13(X+2)$

$0.05X + 0.30 = 0.13X + 0.26$

$0.05X - 0.13X = 0.26 - 0.30$

$-.08X = -.04$

$\frac{-0.08X}{-0.08} = \frac{-0.04}{-0.08}$

$X = 0.5$ cups ✓

Alex should mix 0.5 cups ($\frac{1}{2}$ cup) of the Table Vinegar with the 2 cups of Pickling Vinegar to obtain Vinegar that is 13% acid

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(*) The Problem

(1) Alex wants Vinegar that is 13% acetic acid
(2) He has 5% acetic acid solution (Table Vinegar)
(3) He has 2 cups of 15% acetic acid SOLN. (PICKLING VINEGAR)

(+) How many cups of the Table Vinegar should Alex mix with the 2 cups of Pickling Vinegar to get a 13% acetic acid Soln