



Math Olympiad and Problem Solving Programs
E130 - Honors Geometry Problem Solving
Problem Set 23.2 - Word Problems

Name: _____

Date: _____

1. 60 lb of peanuts and 40 lb of cashews

2. Let x be the number of adult tickets sold, then $2x$ is the number of student tickets sold. This gives the following equation:

$$0.75x + 0.5(2x) = 122.5$$

$$0.75x + x = 122.5$$

$$1.75x = 122.5$$

$$x = 70$$

Thus we know that the tickets sold for the play were 140 student and 70 adult.

3. 192 lb at \$2.50 per lb and 288 lb at \$2.80 per lb

4. We can put the information we need into a table as follows:

Alloy	Ounces	% Gold	Pure Gold
1	x oz	30%	$0.3x$ oz
2	$25 - x$ oz	5%	$0.05(25 - x)$ oz
Final	25 oz	20%	$0.2(25)$ oz

Using the information on the chart, we get the following equation:

$$0.3x + 0.05(25 - x) = 0.2(25)$$

$$0.3x + 1.25 - 0.05x = 5$$

$$0.25x = 3.75$$

$$x = 15$$

Thus we know that we need 15 oz of 30% and 10 oz of 5%.

5. We can put the information we need into a table as follows:

Solution	Liters	% Argyol	Pure Argyol
1	x L	18%	$0.18x$ L
2	$10 - x$ L	0%	0 L
Final	10 L	12%	$0.12(10)$

Using the information on the chart, we get the following equation:

$$0.18x + 0 = 0.12(10)$$

$$0.18x = 1.2$$

$$x = 6\frac{2}{3}$$

Thus we know that we need $6\frac{2}{3}$ L of 18% and $3\frac{1}{3}$ L of water.



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6. We can put the information we need into a table as follows:

Smoothie	Gallons	% Pineapple Juice	Pure Pineapple Juice
1	x gal	9%	$0.09x$ gal
2	3000 gal	15%	$0.15(3000)$ gal
Final	$3000 + x$	12%	$0.12(3000 + x)$

Using the information on the chart, we get the following equation:

$$0.09x + 0.15(3000) = 0.12(3000 + x)$$

$$0.09x + 450 = 360 + 0.12x$$

$$90 = 0.03x$$

$$x = 3000$$

Thus we know we need to add 3000 gallons of 9% juice.

7. 50 nickels, 30 dimes, 30 quarters

8. Michael: 18 years, Ronnie: 23 years

9. 30 years and 10 years

10. Let t be Tina's current age. We get the following equation from the information given:

$$(t + 1) + (t - 2) + 3(t - 5) = 69$$

$$t + 1 + t - 2 + 3t - 15 = 69$$

$$5t - 16 = 69$$

$$5t = 85$$

$$t = \text{span style="border: 1px solid black; padding: 2px;">17 years$$