Linear System Word Problems

1. A health-food company packs almond butter in jars. Some jars hold 250 g. Other jars hold 500 g. On Tuesday, the company packed 186,500 g of almond butter in 511 jars. How many jars of each size did they pack?

2. The difference between two angles in a triangle is 11°. The sum of the same two angles is 77°. Determine the measures of all three angles in the triangle.

3. Wayne wants to use a few pieces of silver to make a bracelet. Some of the jewellery is 80% silver, and the rest is 66% silver. Wayne needs 30 g of 70% silver for the bracelet. How much of each alloy should he use? (Hint: he will need 0.7(30) = 21 g of silver in all)

4. Sue is starting a lawn-cutting business. Her start-up cost to buy two lawn mowers and an edge trimmer is $665. She has figured out that she will use about $1 in gas for each lawn. If she charges $20 per lawn, at what point does her revenue equal her costs (the break-even value)?

5. Nicole has been offered a sales job at High Tech and a sales job at Best Computers. Which offer should Nicole accept? Explain.
   - High Tech: $500 per week plus 5% commission
   - Best Computers: $400 per week plus 7.5% commission

6. When a welder works for 3 h and an apprentice works for 5 h, they earn a total of $175. When the welder works for 7 h and the apprentice works for 8 h, they earn a total of $346. Determine the hourly rate for each worker.

7. Rolf needs 500 g of chocolate that is 86% cocoa for a truffle recipe. He has one kind of chocolate that is 99% cocoa and another kind that is 70% cocoa. How much of each kind of chocolate does he need to make the 86% cocoa blend?