

## Applications of Linear Systems

**Ex 1.**

Let's say you decide to invest \$50,000 in two accounts: one that earns 5% interest annually and one that earns 8% interest annually. To earn \$3400 per year in interest, how much would you need to invest in each account?

**Ex 2.**

Suppose you were a bartender and wanted to mix Kahlua (which has 20% alcohol content) and Vodka (which has about 40% alcohol content) to make a 4 gallon drink that had 25% alcohol content. How many gallons of each would you need to mix?

**Ex 3.**

You're working for a company called Jrader Toes, and want to come up with a healthy snack mix. You decide to mix golden raisins (which are \$2.00 per pound) and almonds (which are \$3.50 per pound). How many pounds of raisins and how many pounds of almonds do you need to make a 9-pound mixture that would cost \$3.00 per pound?

**Ex 4.**

Two cars that were 450 mi apart traveled toward each other. They met after 5 hr. If one car traveled twice as fast as the other, what were their rates?



3. A grocer needs to mix raisins at \$2.00 per pound with granola at \$3.25 per pound to obtain 10 pounds of a mixture that costs \$2.50 per pound. How many pounds of raisins and how many pounds of granola must be used?

Q: A man rode his horse into town on Tuesday. Two days later he rode home on Tuesday. How is this possible?