

## Section 2.3: Applications of equations—today's examples:

1. The perimeter of a rectangle is 24 m, and its area is  $20 \text{ m}^2$ . What are its dimensions?
2. A group of math students are working on topology homework on Saturday decide to order a \$20 pizza and split the cost evenly. One of them decides to eat a salad instead, and this raises the share of the remaining students by \$1 each. How many students were in on the pizza in the beginning?
3. I have mixed grape juice and lemon-lime soda together in a pitcher to make punch. Currently, there is 5 liters of this punch which is 50% grape juice. How much pure grape juice should I add to make a drink with 60% grape juice?
4. Mary wants to invest \$3000. She wants to invest some of it into SuperCalc, Inc. a high-tech startup that promises a 25% annual return (at considerable risk, unfortunately), and the rest into her credit-union savings account at 5% annual interest. How should she split up her money to obtain 10% yearly return on her total investment?
5. A rectangular box (with top) has a square base. The lengths of its 12 sides add up to 120 m. It has a surface area of  $600 \text{ m}^2$ . What are its dimensions?