ex 1: At McDonald's, a chocolate chip cookie has 10 more calories than an ice cream cone. Together they have a total of 310 calories. How many calories does each contain?

ex 2: Bill Gates has a total of 100 dimes and quarters. If the total value of the coins is $14.05, how many quarters does he have?

ex 4: While on vacation, Aquaman went for a swim in a nearby lake. Swimming against the current, it took him 8 minutes to swim 200 meters. Swimming back to shore with the current took half as long. Find Aquaman's average swimming speed and the speed of the lake's current.

ex 5: The sum of two numbers is 15. Their difference is 3. Find the numbers.

ex. 6: A box office sells balcony seats, ground level seats, and VIP passes for shows on tour. The table shows the numbers of each type of ticket sold and the revenues for the first three shows or a tour. What is the price of each type of ticket?

	Balcony	Ground level	VIP	Revenue
Show 1	135	280	29	$37,170
Show 2	150	270	58	$42,240
Show 3	130	265	29	$35,570

Ex. 7 In a photo album, there are 80 pictures. Each picture is in the shape of a square, a rectangle, or a circle. There are 12 times as many rectangles as circles. There are 10 more squares than circles. How many of each type of picture is in the photo album?
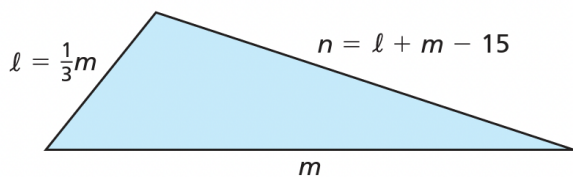
Assignment: Write the matrix you would use to solve the problem. Use your calculator to solve the matrix.

1. At Ben and Jerry's, ice cream cones cost $1.10 and sundaes cost $2.35. One day, the receipts for a total of 172 cones and sundaes were $294.20. How many cones were sold?

2. Your teacher, that's me, is giving you a test worth 100 points containing 40 questions. There are two-point questions and four-point questions on the test. How many of each type of question are on the test?

3. On a canoe trip, Mr. Roe paddled upstream at an average speed of 2 mph relative to the riverbank. On the return trip downstream, his average speed was 3 mph. Find Mr. Roe's paddling speed in still water and the speed of the river's current.

5. A light plane flew from its home base to an airport 255 miles away. With a head wind, the trip took 1.7 hours. The return trip with a tail wind took 1.5 hours. Find the average speed of the plane and the average wind speed.

6. At Whataburger, 4 burgers and 3 fries cost $26.50. 5 burgers and 5 fries cost $36.25. What is the cost for each item?

7. **MODELING WITH MATHEMATICS** A wholesale store advertises that for $20 you can buy one pound each of peanuts, cashews, and almonds. Cashews cost as much as peanuts and almonds combined. You purchase 2 pounds of peanuts, 1 pound of cashews, and 3 pounds of almonds for $36. What is the price per pound of each type of nut? *(See Example 4.)*

8. **PROBLEM SOLVING** A florist must make 5 identical bridesmaid bouquets for a wedding. The budget is $160, and each bouquet must have 12 flowers. Roses cost $2.50 each, lilies cost $4 each, and irises cost $2 each. The florist wants twice as many roses as the other two types of flowers combined.

   a. Write a system of equations to represent this situation, assuming the florist plans to use the maximum budget.

   b. Solve the system to find how many of each type of flower should be in each bouquet.

9. The triangle has a perimeter of 65 feet. What are the lengths of sides ℓ, m, and n?

$\ell = \frac{1}{3}m$ $n = \ell + m - 15$ m

10. In a football game, a total of 45 points were scored. During the game, there were 13 scoring plays. These plays were a combination of touchdowns, extra-point kicks, and field goals, which are worth 6 points, 1 point, and 3 points, respectively. The same number of extra-point kicks and touchdowns were scored, and there were six times as many touchdowns as field goals. How many touchdowns, extra-points, and field goals were scored during the game? *(Sections 2.1 and 2.2)*

11. A small corporation borrowed $800,000 to expand its business. Some of the money was borrowed at each 8%, some at 9%, and some at 10%. The simple interest charged was $67,500 and the amount borrowed at 8% was four times the amount borrowed at 10%. How much money was borrowed at each rate? *(Sections 2.1 and 2.2)*

12. **MODELING WITH MATHEMATICS** Three orders are placed at a pizza shop. Two small pizzas, a liter of soda, and a salad cost $14; one small pizza, a liter of soda, and three salads cost $15; and three small pizzas, a liter of soda, and two salads cost $22. How much does each item cost?