MATH 335E Programming Algorithms
Lab-1 / CRN: 21193

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Question 1

You can use Cramer's rule to solve the following 2×2 system of linear equations:

$$ax + by = e$$
$$cx + dy = f$$

$$x = \frac{ed - bf}{ad - bc} \qquad y = \frac{af - ec}{ad - bc}$$

Write a Java program that solves the following equation and displays the value for x and y:

$$3.4x + 50.2y = 44.5$$
$$2.1x + 0.55y = 5.9$$

Question 2

There is $100\, cm^3$ water in a cylinder with a height of 10 cm and a radius of 2 cm. Three of the spherical balls which made by iron with a radius of 1.5 cm have been thrown into the water. Write a Java program that finds the amount of overflowing water and prints it on the screen.

(Volume of Cylinder$= \pi \times r_c^2 \times h$, Volume of Sphere$= \frac{4}{3} \times \pi \times r_s^3$, $\pi = 3.14$)