

Solving Baucom's Problem 1

$$x + y = 22$$

$$5x + 8y = 140$$

Create Augmented Matrix

$$A = [1 \ 1 \ 22; 5 \ 8 \ 140]$$

$$A = 2 \times 3$$

$$\begin{array}{ccc} 1 & 1 & 22 \\ 5 & 8 & 140 \end{array}$$

New Row 2 = Old Row 2 - 5 OldRow 1

$$A(2,:) = A(2,:) - 5 * A(1,:)$$

$$A = 2 \times 3$$

$$\begin{array}{ccc} 1 & 1 & 22 \\ 0 & 3 & 30 \end{array}$$

Multiply Row 2 by 1/3

$$A(2,:) = (1/3) * A(2,:)$$

$$A = 2 \times 3$$

$$\begin{array}{ccc} 1 & 1 & 22 \\ 0 & 1 & 10 \end{array}$$

New Row 1 = Old Row 1 - Old Row 2

$$A(1,:) = A(1,:) - A(2,:)$$

$$A = 2 \times 3$$

$$\begin{array}{ccc} 1 & 0 & 12 \\ 0 & 1 & 10 \end{array}$$