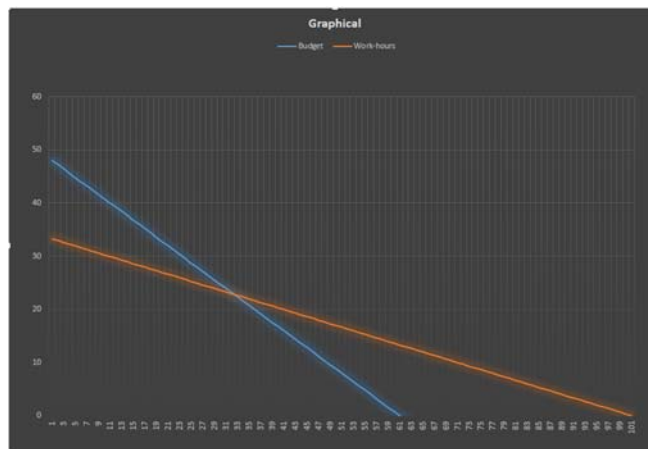


Simultaneous Substitution

The Jack Dog Food Company wants to maximize the company's Marketing ROI from media investment over the next month. Jack promotes through social media and newspapers. The company estimates the average profit per view in newspapers is \$2 and social media is \$7. The Jack Dog Food Company has a monthly promotion budget of \$240. Social media cost \$4 and newspaper \$5 per Ad. The company has 100 work-hours available to develop and maintain promotions. Each newspaper ad takes 1 work-hour and each social media event requires 3 work-hours.



Find the value of the extreme point where the two constraint lines intersect using the Simultaneous Substitution Method.

Budget Constraint: $5X_1 + 4X_2 \leq 240$

Work-hours Constraint: $1X_1 + 3X_2 \leq 100$

1. What is my favorite Football Team (free points)? New England Patriots
2. What is the extreme point (X_1 and X_2 coordinates) at the intersection between the two constraints lines?