What are we learning in Unit 3 – Linear Systems & Linear Programming?

Self-Ratings:

1: I've never seen this topic and wouldn't even know how to begin.

2: I've heard or seen this before, but don't know how to start or complete the problem.

3: I know the topic and can work through the problem but am unsure whether I am correct.

4: I feel confident that I could present my work and solution to the class.

5: I feel that I could correctly teach this topic to another student if asked.

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| **Target** | **Examples** | **Pre-Unit**  | **Mid-Unit** | **Post-Unit** |
| **3A.** Translate a verbal model into an algebraic model. | You are selling tickets for a high school basketball game. Student tickets cost $3 and general admission tickets cost $5. You sell 350 tickets and collect $1450?Select the system of equations that represents the problem above?1. $3x+5y=\$1450$

$$ x+y=350$$1. $3x+5y=350$

$$ x+y=\$1450$$1. $y=3x+5$

$y=5x+1450$ 1. $3y+5y=\$1450$

$$2x=350$$ |  |  |  |
| **3B.** Solve a system of equations graphically and algebraically. | Solve the system of equations.$$-5x+2y=22$$$$ 3x-2y=-10 $$ |  |  |  |
| **3C.** Understand the relationship between a system of equations and its number of solutions. | How many solutions are there to the following system of equations? -4x - 8y = 16 3x + 6y = -12  |  |  |  |
| **3D.** Graph a system of inequalities to determine the feasible region and maximize or minimize an objective function. | What is the minimum value of the objective function $C=4x+3y$ subject to the following constraints? $x\geq 0$ $y\geq 0$ $2x+3y\leq 18$ $3x+y\geq 6$ |  |  |  |
| **3E.** Problem solve using Linear Programming. | Nancy’s bakery can produce either cakes or pies. In a given day, the bakery can turn out at most 200 items, of which, 100 cakes and 50 pies are required by regular customers. The profit on a cake is $5 and on a pie is $4. What number of cakes and pies would maximize Nancy’s profit? |  |  |  |