

1. C
2. D
the last row means one of the equations was extra information.
3. D
Break even is when profit is equal to zero. solving for this gives $x = 28$. The **break even point** is where the cost and profit functions intersect. Plug the x -value into the cost function to get the y -value of the point.

Solve the system using rref and you get $x = 6.6$ and $y = 35.6$

4. B
 5. A
Note: x is measured in hundreds of items and the question is asking for the number of items. i.e. multiple by 100 to get the number of items.
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6. E
Time start with zero in 2000. Here is the information that should be typed into the calculator.

x	3	4	7	8
y	22	40	50	60

7. A
The points are $(10, 1500)$ and $(22, 2700)$
8. D
9. B
10. B
11. This problem was omitted. After simplifying, you end up with the following.

$$\begin{bmatrix} A - 2 & -6 \\ -2 & 3 - 2y \\ 5 - 2z & -8 \end{bmatrix} = \begin{bmatrix} 12 & 8 \\ 0 & 28 \\ 24 & 12 \end{bmatrix}$$
 notice that the element in row 1 column 1 of both matrices are not equal so that is not any way to solve for the variable since the matrices are not equal.

12. C
The last row indicates that there is no solution. Also saying no solution means that there is no solution for all of the variables.
13. A
14. B
be sure to line up the variables in these equations and then use rref.
15. A
The points for the demand function are $(40, 200)$ and $(240, 150)$. The other points in the problem are for the supply equation.

16. A
The solution for the system of equations is $x = 2$, $y = 0$, and $z = -3$. While these are three numbers they are one solution to the system of equations.
17. D
18. D
19. E
Solving $JX = K$ for the matrix X give $X = J^{-1}K$. Now compute $J^{-1}K$ using the calculator.
20. A
21. B
note $20 \leq z \leq 75$ is all numbers in this interval. since we are talking about apartments, we only want the integers.
22. B
 K is not a square matrix, so the inverse is not possible.