Math 1300 Fall 2013
Friday August 30 2013
Exercises

1. Change the third row by adding to it (-4) times the second row:

$$\left[\begin{array}{ccc|c} 1 & 0 & 7 & 9 \\ 0 & 1 & -2 & 3 \\ 0 & 4 & 8 & 5 \end{array}\right]$$

Math 1300 Fall 2013
Friday August 30 2013
Exercises

2. Write the augmented matrix corresponding to the system of linear equations:

$$\left\{\begin{array}{rcrcrcl} & + & y & - & z & = & 22 \\ 2x & + & & + & & = & 17 \\ x & - & 3y & + & & = & 12 \end{array}\right\}$$

Math 1300 Fall 2013
Friday August 30 2013
Exercises

3. Write the system of linear equations corresponding to the augmented matrix:

$$\left[\begin{array}{ccc|c} \frac{6}{5} & -1 & 12 & -\frac{2}{3} \\ -1 & 0 & 0 & 5 \\ 0 & 2 & -1 & 6 \end{array}\right]$$

Math 1300 Fall 2013
Friday August 30 2013
Exercises

4. Carry out the indicated row operation:

$$\left[\begin{array}{cc|c} 1 & 3 & -2 \\ 4 & 4 & 5 \end{array}\right] \xrightarrow{R_2+(-4)R_1} \left[\begin{array}{cc|c} & & \\ & & \end{array}\right]$$

Math 1300 Fall 2013
Friday August 30 2013
Exercises

5. Carry out the indicated row operation:

$$\left[\begin{array}{cc|c} 4 & 5 & 6 \\ -3 & 2 & 0 \end{array}\right] \xrightarrow{R_2+(1)R_1} \left[\begin{array}{cc|c} & & \\ & & \end{array}\right]$$

Math 1300 Fall 2013
Friday August 30 2013
Exercises

6. Solve the linear system by the Gauss Jordan elimination method:

$$\left\{ \begin{array}{rcrcr} \frac{3}{2}x & + & 6y & = & 9 \\ \frac{1}{2}x & - & \frac{2}{3}y & = & 11 \end{array} \right\}$$

Math 1300 Fall 2013
Friday August 30 2013
Exercises

7. Solve the linear system by the Gauss Jordan elimination method:

$$\left\{\begin{array}{rcrcrcl} x & + & & + & 2z & = & 9 \\ & + & y & + & z & = & 1 \\ 3x & - & 2y & + & & = & 9 \end{array}\right\}$$

Math 1300 Fall 2013
Friday August 30 2013
Exercises

8. A baseball player's batting average is determined by dividing the number of hits by the number of times at bat, and multiplying by 1000. (Batting averages are usually, but not necessarily, rounded to the nearest whole number.) For instance, if a player gets 2 hits in 5 times at bat, his batting average is 400: ($\frac{2}{5} \times 1000 = 400$). Partway through the season, a player thinks to himself, "If I get a hit in my next time at bat, my average will go up to 250. If I don't get a hit, it will drop to 187.5". How many times has this player batted, how many hits has he had, and what is his current batting average?

Math 1300 Fall 2013
Friday August 30 2013
Exercises

9. A one-pound mixture of nuts contains cashews (60 ¢/ounce), almonds (40 ¢/ounce), and walnuts (70 ¢/ounce) and costs \$8.90. The mixture contains the same weight of cashews as walnuts. How many ounces of each type of nut does the mixture contain?

Math 1300 Fall 2013
Friday August 30 2013
Exercises

10. New parents Jim and Lucy want to start saving for their son's college education. The have \$5000 to invest in three different types of plans. A traditional savings account pays 1% annual interest, a certificate of deposit pays 3.6% annual interest, and a prepaid college plan pays 5.5% annual interest. If they want to invest the same amount in the prepaid college plan as in the other two plans together, how much should they invest in each plan to realize an interest income of \$195 for the first year?