Math 220 Assignment

September 26, 2001

Due Monday, October 1

Compare the following solutions of problems from past assignments with your private work. If you have not had a chance to do these problems until now, please attempt to do them **before** looking at these solutions.

Due September 12

No. 2 Put the first 3 columns of the augmented matrix in reduced row echelon form:

$$
\begin{pmatrix}
1 & 5 & -2 & u \\
-2 & 4 & -3 & v \\
-1 & -3 & 1 & w
\end{pmatrix}
\longrightarrow
\begin{pmatrix}
1 & 0 & \frac{1}{2} & -\frac{3}{2}u - \frac{5}{2}w \\
0 & 1 & -\frac{1}{2} & \frac{1}{2}u + \frac{1}{2}w \\
0 & 0 & 0 & v - 5u - 7w
\end{pmatrix}
$$

(a) $x = t(-\frac{1}{2}, \frac{1}{2}, 1)$.
(b) There is no solution x.
(c) $x = (-1, 0, 0) + t(-\frac{1}{2}, \frac{1}{2}, 1)$.
(d) $5y_1 - y_2 + 7y_3 = 0$.

Due September 14

No. 1 Observe that

$$
R(s, t) = \begin{pmatrix}
1 & 2 \\
-2 & -1 \\
-2 & 2
\end{pmatrix}
\begin{pmatrix}
s \\
t
\end{pmatrix},
$$

and we put the first 2 columns of the augmented matrix in reduced row echelon form:

$$
\begin{pmatrix}
1 & 2 & x \\
-2 & -1 & y \\
-2 & 2 & z
\end{pmatrix}
\longrightarrow
\begin{pmatrix}
1 & 0 & -\frac{1}{3}x - \frac{2}{3}y \\
0 & 1 & \frac{2}{3}x + \frac{1}{3}y \\
-2 & 2 & z - 2x - 2y
\end{pmatrix}
$$

(a) $z = 2x + 2y$.
(b) a plane.

Due September 24

No. 1 A few of the answers:

(a) $x = t(2, -1, 1, 0)$.
(b) $x = (1, 0, 0, 0)$.
(d) $x = (1, 1, 0, -2)$.
(g) The image of f is the set of all vectors y with $y_1 = 2y_2 + 2y_3 + 9y_4$.

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`http://math.albany.edu:8000/math/pers/hammond/course/mat220/assgt/la010926.html`