Sample Questions to the Final Exam in Math 1111—Chapter 5

Section 5.1

1. Solve the following system of equations by using the method of substitution: $5x+y=11$ and $3x-2y=4$.

a. $\left(\frac{15}{13},\frac{68}{13}\right)$ *b.* $(2,21)$ *c.* $(2,1)$ *d.* $\left(\frac{15}{8},-15\right)$ *e.* None of these

2. The point of intersection for the following system of equations (using the method of substitution) is:
$$\begin{aligned} 3x-2y&=16 \\ -2x+y&=-14 \end{aligned}$$

a. $\left(\frac{136}{23},\frac{50}{23}\right)$ *b.* $(12,10)$ *c.* $(12,-38)$ *d.* No solution *e.* None of these

3. Solve the following system of equations using the method of substitution: $2x-3y=11$ and $-4x+6y=1$.

a. No solution *b.* $\left(\frac{17}{2},2\right)$ *c.* Infinitely many solutions *d.* $(4,-1)$ *e.* None of these

4. The x-coordinate of the point of intersection of the following system of equations (using the method of substitution) is: $\frac{1}{3}x-\frac{3}{5}y=-2$ and $2x-y=14$.

a. 25.5 *b.* 37 *c.* 44 *d.* 12 *e.* None of these

5. Solve the following system of equations using the method of elimination: $6x-5y=4$ and $3x+2y=1$.

a. $\left(2,\frac{8}{5}\right)$ *b.* $\left(-\frac{2}{9},-\frac{8}{5}\right)$ *c.* $\left(-\frac{8}{5},-\frac{68}{25}\right)$ *d.* $\left(\frac{13}{27},-\frac{2}{9}\right)$ *e.* None of these

6. The y-coordinate of the point of intersection of the following system of equations (using the method of elimination) is:
$$\begin{aligned} 2x-3y&=-2 \\ x-y&=4 \end{aligned}$$

a. 12 *b.* 10 *c.* $\frac{74}{13}$ *d.* 37 *e.* None of these

7. The point of intersection for the following system of equations (using the method of elimination) is: $6x-8y=2$ and $\frac{9}{2}x-6y=\frac{3}{2}$.

a. $\left(\frac{3}{2},4\right)$ *b.* $\left(\frac{2}{3},\frac{1}{4}\right)$ *c.* Infinitely many solutions *d.* No solution *e.* None of these

8. Use the method of elimination to solve the system: $4x-6y=7$ and $y=\frac{2}{3}x+5$.

a. $\left(\frac{11}{8},-\frac{1}{4}\right)$ *b.* No solution *c.* Infinitely many solutions *d.* $\left(-\frac{3}{8},-\frac{17}{12}\right)$ *e.* None of these