Name: _____ **MAT 296: HW 4**
Spring 2018 **Due: 02/16**

Problem 1: What is the least common multiple of the following polynomials: $\{x-2,(x-2)(x-3)\}$?

Problem 2: What is the least common multiple of the following polynomials: $\{x^2+x-6, x^2-7x+10\}$?

Problem 3: Solve the following system of equations:

$$a+b=5$$
$$a-b=7$$

Problem 4: Solve the following system of equations using elimination:

$$2x-y+z=8$$
$$x-2y+z=7$$
$$-x+y-z=-6$$

Problem 5: Integrate the following:

$$\int \frac{3 \ln x}{x^4} \, dx$$

Problem 6: Integrate the following:

$$\int \sin^3 \theta \, d\theta$$

Problem 7: Find the volume resulting from rotating the region bound by $y = \sin x$, $y = 0$, and $x = \dfrac{\pi}{2}$ about the y-axis.