How to use these: Do the problems as if you were taking a test: without notes or textbook, and give yourself a time limit as stated at the start of each self-test. At the end of that time, check your answers. Then review as needed before you redo the self-test. The answers and partial solutions will be posted on the course blog and will tell you which section each problem comes from.

Self-Test A: allow 50 minutes.

1) Solve the system of equations:

$$2x + 2y + 4z = -6$$
$$3x + y + 2z = 29$$
$$x - y - z = 44$$

2) $y = x^2 - 6x + 8$

(a) Find the vertex of the parabola by completing the square
(b) Find the x- and y-intercepts
(c) Sketch the graph of the parabola plotting no more than four points.

3) Determine the center and radius of the circle whose equation is $x^2 + y^2 - 4y - 5 = 0$

Solve the equation by using the quadratic formula:

4) $3x^2 + 6x - 7 = 0$

Solve the system of nonlinear equations:

5) $x^2 - y^2 = 16$
$x^2 + 9y^2 = 36$

Self-Test B: allow 50 minutes.

For problems 1-2, Find the vertex of the following parabolas by completing the square:
(b) Find the x- and y-intercepts
(c) Sketch the graph of the parabola plotting no more than four points.

1) $y = 2x^2 + 6x$

2) $y = -x^2 - 8x + 1$

3) Let $(0, 4)$ be the center of a circle that passes through the point $(-2, 5)$.

a) Use the distance formula to find the radius of the circle.
b) Write the equation of the circle in standard form.

Solve the equation by using the quadratic formula:

4) $x(x + 4) = -9$

Solve the system of nonlinear equations:

5) $y = 2x^2 - 1$
$2x + y = 3$

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