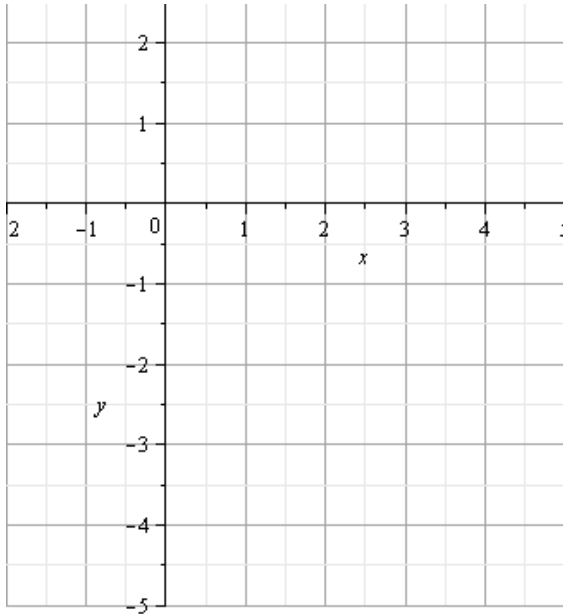1. Let $f(x) = \dfrac{2}{3}x - 4$ in the following:

     a. (5 pts) Determine the slope and y-intercept of f.

     b. (5 pts) Use the slope and y-intercept to graph f here:

     c. (5 pts) Determine the average rate of change of f.

     d. (5 pts) Is f increasing, decreasing or constant?

2. (5 pts) Suppose y varies jointly as x and z and inversely as the cube of w. If $y = 2$ when $x = 3$, $z = 2$, and $w = 2$ what is y when $x = 5$, $z = 2$, and $w = 2$?

3. Let $f(x) = 2x^2 + 5x - 12$.

    a. (5 pts) Find the zeros of f by factoring.

    b. (5 pts) Find the zeros of f by quadratic formula.

    c. (5 pts) Find the zeros of $f(x) = x^2 - 4x - 7$ by completing the square.

4. (20 pts) Complete the square for $f(x) = x^2 - 4x - 12$, and re-write it in the form $a(x-h)^2 + k$. Sketch its graph, based on your work. Label the vertex, axis of symmetry, and x- and y-intercepts on your graph. State the range of f.

5. (10 pts) Compute the discriminant for $h(x) = 5x^2 - 4x + 1$. How many zeroes does h have, and are they real, nonreal, one of each, or what?

6. (10 pts) Find the complex zeros of $f(x) = 4x^2 - 5x + 2$. Leave your answer in simplified radical form (no calculator stuff).

7. (10 pts) Solve $2x^2 < 5x + 7$. Express your answer in both set-builder and interval notation.

8. (5 pts) Solve $|3x - 5| = 2$

9. (5 pts) Solve $|5x - 11| < 7$