Question 1:

(a)[5 points] Solve for w:

$$|2 - 11w| = 3$$

(b)[5 points] Solve for x and state your answer using interval notation:

$$\left|\frac{2 - 5x}{3}\right| \geq 5$$

Question 2:

(a)[5 points] Find both (i) the distance and (ii) midpoint between the points $A(-1, 4)$ and $B(3, -1)$.

(b)[5 points] The point (a, a) is a distance 5 units from the point $(3, -4)$. Find all possible values of a.

Question 3:

(a)[5 points] Complete the square and state the centre and radius of the following circle:

$$x^2 + y^2 - 8x + 10y + 37 = 0$$

(b)[5 points] Give the equation of the circle with centre $\left(\frac{1}{2}, \frac{-1}{2}\right)$ that passes through the point $\left(2, \frac{3}{2}\right)$.

Question 4: This question concerns the equation $x = 2y^2 - 18$.

(a)[**4 points**] Find the x and y intercepts of the graph of the equation.

(b)[**6 points**] Determine if the graph of the equation possesses symmetry with respect to the x-axis, the y-axis, or the origin.

Question 5:

(a)[5 points] Find the zeros of $f(x) = 2(x-3)^2 - 4$.

(b)[5 points] Sketch the graph of $f(x) = 2(x-3)^2 - 4$ by applying transformations to one of the basic functions we saw in class. Show at least one point on your final graph, and also indicate the scale on the x and y axes.