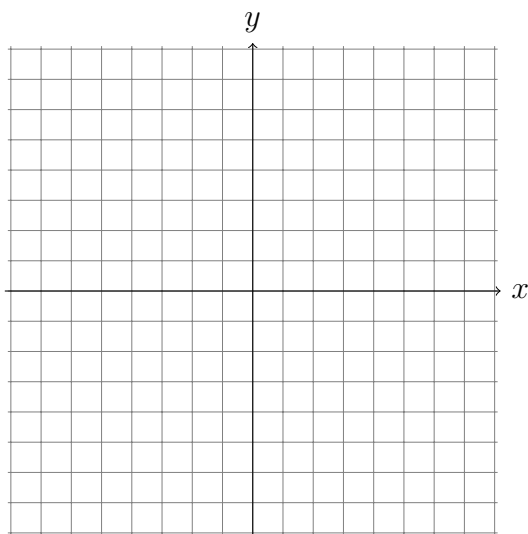


In this problem you will calculate the minimum vertical distance between two curves,
 $y = f(x) = x^2 + x$ and $y = g(x) = 3x - 4$.

- a)[1] Sketch both curves $y = f(x)$ and $y = g(x)$ on a single set of axes below. Label all axis intercepts:



- b)[2] Find a function d so that $d(x)$ is the vertical distance between the two curves above, at the point x on the x -axis.
- c)[3] Using calculus methods for finding max/min calculate the minimum vertical distance between the two curves and the x -value where this occurs. Make sure you justify why your answer is a minimum and not a maximum or something else
- d)[1] Include the following (completed) statement in your solution: The minimum vertical distance is _____ when $x =$ _____