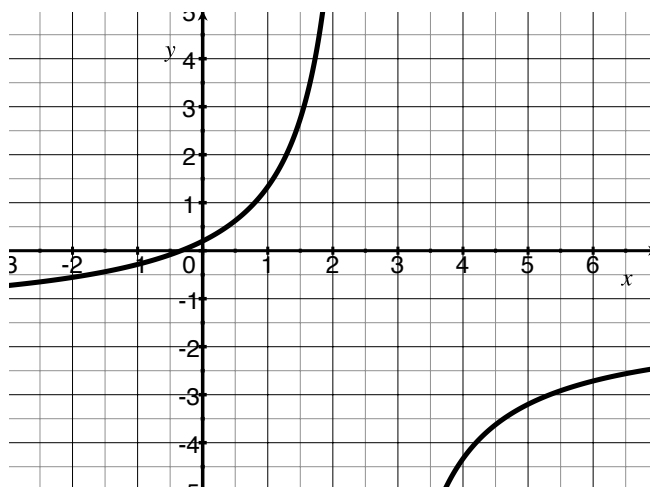


Quiz 3

Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.

1. [2] (§2.8 #39) The graph of $g(x) = \frac{1 + 3x}{5 - 2x}$ is given below. If g has an inverse function, find it.



2. [2] Perform the addition or division and write the result in the form $a + bi$

(§3.4 #17) $\left(7 + \frac{1}{2}i\right) - \left(5 + \frac{3}{2}i\right)$

(§3.4 #33) $\frac{2 - 3i}{1 - 2i}$

3. Let $q(x) = -2x^2 + 9x - \frac{81}{8}$.

(a) [3] (§2.5 #11) Complete the square to write q in vertex form (i.e. $a(x - h)^2 + k$).

(b) [2] (§2.4 #25) List the graph transformations that would transform the graph of $f(x) = x^2$ into the graph of q . Be sure to list the transformations in order.

(c) [1] (§2.8 #5) Does q have an inverse? Justify your answer.