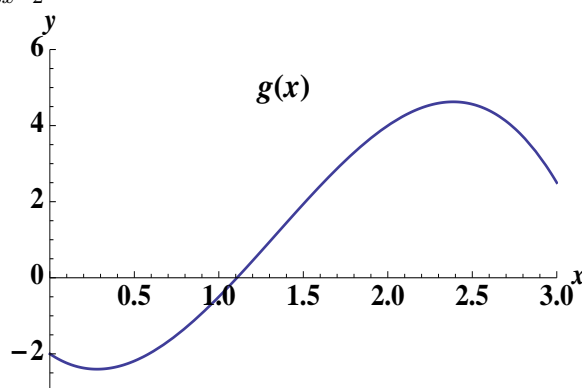


6. [7 points] Let  $f(x) = \frac{1}{3x-2}$  and  $g(x)$  be the function whose graph is shown below.



- a. [3 points] Let  $P_2(x) = a + b(x - 2) + c(x - 2)^2$  be the second order Taylor polynomial approximating  $g(x)$  for  $x$  near 2. What can you say about the signs of the coefficients  $a$ ,  $b$  and  $c$ ?

- b. [4 points] Find the second order Taylor polynomial approximating  $f(x)$  for  $x$  near  $-1$ .