

- For $g_1(x) = (x^2 + 2)/3$, we have $|g'_1(2)| = |\frac{2}{3}2| = \frac{4}{3} > 1$, so that the iteration diverges.
- For $g_2(x) = \sqrt{3x - 2}$, we have $|g'_2(2)| = |3 \cdot \frac{1}{2} \frac{1}{\sqrt{3x-2}}| = \frac{3}{4} < 1$, so that the iteration converges linearly from one side.
- For $g_3(x) = 3 - 2/x$, we have $|g'_3(2)| = |\frac{1}{2}| = \frac{1}{2} < 1$, so that the iteration converges linearly from one side.
- For $g_4(x) = (x^2 - 2)/(2x - 3)$, we have $|g'_4(2)| = |0| = 0$, so that the iteration converges quadratically.