$$g_1'(x) = \frac{2x}{3}$$

$$g_2'(x) = \frac{3}{2\sqrt{3x-2}}$$

$$g_3'(x) = \frac{2}{x^2}$$

$$g_4'(x) = \frac{2x}{2x-3} - 2\frac{(x^2-2)}{(2x-3)^2}$$

Evaluating each $|g_i'(2)|$, we get that

$$|g_1'(2)| = \frac{4}{3} > 1$$

$$|g_2'(2)| = \frac{3}{4} < 1$$

$$|g_3'(2)| = \frac{2}{4} < 1$$

$$|g_4'(x)| = \frac{4}{1} - 2\frac{(2)}{(1)^2} = 0$$

Hence, g_4 will have fastest convergence, while g_2, g_3 will converge. g_1 will diverge.

We expect g_3, g_2 to converge linearly. However, g_3 will converge with a better constant since $|g_3'(2)| < |g_2'(2)|$.

Since $g_4'(2) = 0$, it should have superlinear convergence.