Name:

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Find the values of x_1, x_2 and x_3 of the following iterative equations:

a) $x_{n+1} = 2 + \frac{2}{x_n}$ and $x_0 = 1$

d) $x_{n+1} = \frac{5}{3+(x_n)^2}$ and $x_0 = 0.5$

b) $x_{n+1} = 1 + \frac{3}{1+x_n}$ and $x_0 = 1$

e) $x_{n+1} = \frac{x_n+2}{x_n-4}$ and $x_0 = 0.5$

c) $x_{n+1} = 5 - \frac{1}{x_n}$ and $x_0 = 1$

f) $x_{n+1} = 4 - \frac{2+x_n}{3(x_n)}$ and $x_0 = 0.4$

Find a solution to these iterative equations correct to 3 significant figures:

g) $x_{n+1} = 2 + \frac{2}{3+x_n}$ and $x_0 = 1$

h) $x_{n+1} = 3 + \frac{6}{x_n}$ and $x_0 = 2$

Exam question:

Using $x_{n+1} = -2 - \frac{2}{(x_n)^2}$ with $x_0 = -1$

a) Find the values of x_1, x_2 and x_3

b) Continue the iteration to find a solution correct to 2 decimal places