

Problem Set 3 SOLUTIONS

Question 1: According to the following table of data for $g(x)$:

x	$g(x)$
5.01	0.15674
15.03 = x_0	0.56321 = g_0
31.02 = x_1	0.78432 = g_1

Approximate $g(17.08)$ using linear Lagrange polynomial interpolation.

SOLUTION:

$$g(17.08) \approx p_1(x)$$

$$p_1(x) = \frac{(x - x_1)}{(x_0 - x_1)}(g_0) + \frac{(x - x_0)}{(x_1 - x_0)}(g_1)$$

$$p_1(x) = \frac{(17.08 - 31.02)}{(15.03 - 31.02)}(0.56321) + \frac{(17.08 - 15.03)}{(31.02 - 15.03)}(0.78432)$$

$$p_1(x) \approx 0.59155$$

$$g(17.08) \approx p_1(x) \approx 0.59155$$

GOOD LUCK!

STUDY + LEARN + SOLVE QUIZ 3 = PASS QUIZ 3

Best Regards

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