Worksheet 6 Solutions

Wednesday, February 24, 2021 9:41 AM

1. table for Qs look like:

a.

Q_(01) (1/2)	0.111111		Q_(11) (1/2)	0.666667		Q_(2,2) (1/2)	1.5		Q_(3,3) (1/2)	1.777778		Q_(44)	1.708333
11	0.333333		21	1.333333		32	1.833333		43	1.666667			
21	1		31	2		42	1.5						
31	3		41	0									
41	9												

b. for the other approximation, table for Qs look like

c.

Q_(01) (1/2)	0		Q_(11) (1/2)	3		Q_(2,2) (1/2)	1.242641		Q_(3,3) (1/2)	1.62132		Q_(44)	1.690607
11	1		21	1.828427		32	1.747547		43	1.736798			
21	1.414214		31	1.707107		42	1.726049						
31	2		41	1.763932									
41	2.236068												

2. For this just need to solve:
   a. $y = \frac{6}{2^3} + \frac{b}{2^2} + \frac{c}{2}$
   b. $3 = 6 + b + c$
   c. $2 = 6 \cdot 2^3 + b2^2 + 2c$
   d. I get $y = \frac{3}{4} - \frac{8}{4} - \frac{11}{2}$
3. I got

   2.360605

4. apply divided differences to see that the fourth and fifth order terms are zero.