Extra Problems from Section 4.4, The Theory of Interest
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Problem 4.4E1

Starting with

$$a_{\overline{1}|}^{(m)} = \sum_{k=1}^{m} \frac{v^{k/m}}{m}, \tag{1}$$

show

$$a_{\overline{1}|}^{(m)} = \frac{d}{i^{(m)}}. \tag{2}$$

Problem 4.4E2

Starting with

$$s_{\overline{1}|}^{(m)} = \sum_{k=0}^{m-1} \frac{(1+i)^{k/m}}{m}, \tag{3}$$

show

$$s_{\overline{1}|}^{(m)} = \frac{i}{i^{(m)}}. \tag{4}$$

Problem 4.4E3

Show

$$\ddot{a}_{\overline{1}|}^{(m)} = \frac{d}{d^{(m)}} \tag{5}$$

without using (4.9).

Problem 4.4E4

Show

$$\ddot{s}_{\overline{1}|}^{(m)} = \frac{i}{d^{(m)}} \tag{6}$$

without using (4.10).