

2. [6 points] Let the sequence a_n be given by

$$a_1 = -1, \quad a_2 = \frac{\sqrt{2}}{3}, \quad a_3 = -\frac{\sqrt{3}}{5}, \quad a_4 = \frac{\sqrt{4}}{7}, \quad a_5 = -\frac{\sqrt{5}}{9}, \quad a_6 = \frac{\sqrt{6}}{11}$$

a. [1 point] Find a_7 .

Solution:

$$a_7 = \frac{-\sqrt{7}}{13}.$$

b. [3 points] Write a formula for a_n .

Solution:

$$a_n = (-1)^n \frac{\sqrt{n}}{2n-1}.$$

c. [2 points] Does the sequence a_n converge? If so, find its limit.

Solution: Yes, it converges to 0.