

Question

#29 determine the indicated term of the sequence

$$a_n = \frac{4n}{2n^2 - 3} \quad a_{11} = \underline{\hspace{2cm}}$$

Answer

$$a_{11} = \frac{4 \cdot 11}{2 \cdot 11^2 - 3} = \frac{44}{239}$$

Question

#41 write an expression for the most apparent n th term of the sequence

assume n begins with 1

1,4,7,10,13,.....

(note this is an arithmetic sequence)

Answer

$4-1 = 3$ $7-4 = 3$ $10-7 = 3$ $13-10 = 3$ common difference is 3 and initial term is 1

$a_n = a_1 + (n-1) \cdot d$ implies

$a_n = 1 + (n-1) \cdot 3$ implies

$a_n = 1 + 3n - 3 = 3n - 2$

Question

#49 write an expression for the most apparent nth term of the sequence

assume n begins with 1

$$1, \frac{1}{4}, \frac{1}{9}, \frac{1}{16}, \frac{1}{25}$$

(note this is a sequence involving a power)

This sequence has perfect square denominators

Answer

$$\frac{1}{1}, \frac{1}{4}, \frac{1}{9}, \frac{1}{16}, \frac{1}{25} = \frac{1}{1^2}, \frac{1}{2^2}, \frac{1}{3^2}, \frac{1}{4^2}, \frac{1}{5^2}$$

$$a_n = \frac{1}{n^2}$$

Question

#51 write an expression for the most apparent nth term of the sequence

assume n begins with 1

1, -1, 1, -1, 1,

(note this is a sequence involving a power of a negative number)

This is a geometric sequence

Answer

$$\frac{-1}{1} = -1 \quad \frac{1}{-1} = -1 \quad \frac{-1}{1} = -1 \quad \frac{1}{-1} = -1 \quad a_1 = 1 \quad r = -1$$

$$a_n = a_1 r^{n-1} \text{ implies } a_n = 1 \cdot (-1)^{n-1}$$