1.

5.

9.

11.

15.

17.

21.

31.

$$a_n = 2 + (0.1)^n$$

$$= 2 + \frac{1}{10^n} \qquad \text{re-write sequence}$$

$$\lim_{n\to\infty} 2 + \frac{1}{10^n} \qquad \text{take limit as } n \to \infty$$

$$= 2 + \lim_{n\to\infty} \frac{1}{10^n} = 2 + 0 = 2 \qquad \text{evaluate limit}$$

33.

$$a_n = \frac{1-2n}{1+2n}$$

$$\lim_{n\to\infty} \frac{1-2n}{1+2n} \qquad \text{take limit}$$

$$= \frac{-2}{2} = -1 \qquad \text{coeff. of both parts since orders are same}$$

35.

$$a_n = \frac{1-5n^4}{n^4+8n^3}$$

$$\lim_{n\to\infty} \frac{1-5n^4}{n^4+8n^3} \qquad \text{take limit}$$

$$= \frac{-5}{1} = -5 \qquad \text{coeff. of both parts since orders are same}$$

39.

43.

49.

61.

65.