

q1. ① polynomial

1 2

3 4

Answer:

5 6

7 8

$$\frac{(x-3)(x-5)(x-7)}{\frac{3 \times 5 \times 7}{2} \cdot \frac{2 \times 5 \times 7}{2} \cdot \frac{2}{2 \times 7}} + \frac{(x-3)(x-1)(x-7)}{\frac{3 \times 7}{3} \cdot \frac{2 \times 7}{2 \times 5 \times 7} \cdot \frac{5 \times 7}{4}} + \frac{(x-1)(x-3)(x-5)}{\frac{3}{3 \times 7} \cdot \frac{5 \times 7}{6}} + \frac{(x-3)(x-1)(x-5)}{\frac{5 \times 7}{8}}$$

② Taylor series
 e^{10x}

$$\frac{d}{dx} e^{ax} = ae^{ax}$$

$$d'(0) = 10^1 a e^{ax} = a$$

$$d''(0) = 10^2 a^2 e^{ax}$$

$$d'''(0) = 10^3 a^3 e^{ax}$$

$$d^{(4)}(0) = 10^4 a^4 e^{ax}$$

$$d^{(5)}(0) = 10^5 a^5 e^{ax}$$