A series of increasingly better approximations to the sine function

$$\sin(x) \approx x$$

$$\sin(x) \approx x - \frac{x^3}{6}$$

$$\sin(x) \approx x - \frac{x^3}{6} + \frac{x^5}{120}$$

$$\sin(x) \approx x - \frac{x^3}{6} + \frac{x^5}{120} - \frac{x^7}{5040}$$

$$\sin(x) \approx x - \frac{x^3}{6} + \frac{x^5}{120} - \frac{x^7}{5040} + \frac{x^9}{362880}$$

etc.

only the odd powers of x

alternating $+, -, +, -, +$

the numerators are the factorials of the power.

e.g. the x^7 term is divided by 5040,
and $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 = 5040$.