

23.05.2013:

2022-09-02

Управление

Kommunikationskonzept

Dasawas

○△○
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O_2	H_2	C_2H_2	CH_4	CO_2	NO_2	SO_2
2	1	1	1	1	1	1
2	1	1	1	1	1	1
2	1	1	1	1	1	1
2	1	1	1	1	1	1

3780 X 1000 = 3780000

② Kouuu :

crossing passing
1 1
v >
= =
crossing

Passenger = 1

16

Коэффициенты на логарифм

$\log_{10} x = C - \log_{10} x - y$

$x = 10^{\frac{C-y}{2}}$

$$\sqrt{c} = 1$$

Homologous ≤ 1 (Dawson)

pass.

C X O G S U M

Кримперий на Амбон

$$\sum_{n=1}^{\infty} n^q \leq C \log x$$

$$\left[\begin{array}{cc} 2 & 3 \\ 2 & 3 \end{array} \right] \left[\begin{array}{cc} 2 & 3 \\ 2 & 3 \end{array} \right] = \left[\begin{array}{cc} 1 & 4 \\ 1 & 4 \end{array} \right]$$

$$n \sqrt{m \times q_1} = \sqrt{m} \cdot \sqrt{q_1} \rightarrow |q_1| < \Delta$$

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$$\begin{array}{r} 0 \\ \times 5 \\ \hline 0 \end{array}$$

$$\begin{aligned}
 & \text{Left side:} \\
 & \frac{\alpha}{\alpha+1} \cdot \frac{\alpha+1}{\alpha+2} \cdots \frac{\alpha+n-1}{\alpha+n} = \frac{\alpha}{\alpha+n} \\
 & \text{Right side:} \\
 & \frac{1}{n+1} + \frac{1}{n+2} + \cdots + \frac{1}{n+n} = \frac{1}{n+1} + \frac{1}{n+2} + \cdots + \frac{1}{2n} \\
 & \text{Simplifying the right side:} \\
 & \frac{1}{n+1} + \frac{1}{n+2} + \cdots + \frac{1}{2n} = \frac{1}{n+1} + \frac{1}{n+2} + \cdots + \frac{1}{n+n} \\
 & \text{Left side equals right side:} \\
 & \frac{\alpha}{\alpha+n} = \frac{1}{n+1} + \frac{1}{n+2} + \cdots + \frac{1}{n+n}
 \end{aligned}$$

$$\log \left| \frac{a_n}{a_{n+1}} \right| = \frac{\ln((n+1)^2)}{(2n+2)(n+1)^2} - \frac{\ln((n+1)^2)}{(2n+1)(n+1)^2}$$

$$\frac{a_{n+1}}{a_n} < 1$$

$$= \frac{n^2 \ln(n+1)^2}{2(2n+2)(2n+1)(n+1)^2}$$

$$= \frac{n^2 (n+1)^2}{2^{n+2} n^2 + 2^{n+1} n^2 + 2^{n+1}}$$

$$= \frac{n^2 + 5n + 2}{2(n+1)^2} - 1$$

$$= \frac{n^2 + 5n + 2 - 2n - 2}{2(n+1)^2} = \frac{n^2 + 3n}{2(n+1)^2}$$

$$= \frac{n^2}{2(n+1)^2} = \frac{n^2}{2^{n+2} n^2 + 2^{n+1} n^2 + 2^{n+1}}$$

$$< 1 \text{ when } n > 1$$

$$\lim_{n \rightarrow \infty} \left(\frac{e^n}{(n+1)^n} - 1 \right) = e \cdot \lim_{n \rightarrow \infty} \frac{e^{-n} - 1}{(n+1)^{-n}} = e \cdot \lim_{n \rightarrow \infty} \frac{-1}{(n+1)^{-n}} = e \cdot \lim_{n \rightarrow \infty} -\frac{1}{n+1} = e \cdot 0 = 0$$

$$\sum_{n=1}^{\infty} \frac{(-1)^n (n!)^2}{(2n)! (n+1)!} (-1)^n$$

now showing

cx.

$a_{n+1} < a_n$

\Rightarrow cx.

$$\log \left| \frac{a_n}{a_{n+1}} \right| = \frac{1}{n!}$$

$$= \frac{(n+1)^{n+1} \cdot 1}{(n+1)^{n+1} \cdot (n+1)^{n+1}} = \frac{(n+1)^{n+1}}{(n+1)^{n+1}} = 1$$

$$(1 + \frac{1}{n})^{n+1} - 1 \rightarrow e$$

parte

$$\lim_{n \rightarrow \infty} \left(\frac{e^n}{(n+1)^n} - 1 \right) = e \cdot \lim_{n \rightarrow \infty} \frac{e^{-n} - 1}{(n+1)^{-n}} = e \cdot \lim_{n \rightarrow \infty} \frac{-1}{(n+1)^{-n}} = e \cdot 0 = 0$$

\Rightarrow

$$\text{3aq. } \sum_{n=1}^{\infty} n^k q^n \text{ e c x o g w y}$$

$$-1 < q < 1$$

Konw.

$$n^k = \left(\sqrt[n]{n \cdot q^n} \right)^k = \left(\sqrt[n]{n} \cdot q^n \right)^k = |q|^k \cdot \underbrace{\left(\sqrt[n]{n} \right)^k}_{\text{d e g o n i o n o u x.}} > 0$$

d e g o n i o n o u x.

$$|q| \geq 1 \quad q \rightarrow 0 \quad \rightarrow 0$$

$q = 0$ cx.

$$\frac{0}{0} \stackrel{0}{\underset{0}{\parallel}} \frac{0}{0} \stackrel{0}{\underset{0}{\parallel}} \frac{0}{0} \stackrel{0}{\underset{0}{\parallel}} \dots$$

= cx.

$$\text{3aq. } \sum_{n=1}^{\infty} \frac{2.5.8 \dots [2+3(n-1)]}{1.3.5 \dots [1+3(n-1)]}$$

$$\frac{0}{0} \stackrel{0}{\underset{0}{\parallel}} \frac{0}{0} \stackrel{0}{\underset{0}{\parallel}} \frac{0}{0} \stackrel{0}{\underset{0}{\parallel}} \dots$$

= cx.

(3aq)

$$\frac{0}{0} \stackrel{0}{\underset{0}{\parallel}} \frac{0}{0} \stackrel{0}{\underset{0}{\parallel}} \frac{0}{0} \stackrel{0}{\underset{0}{\parallel}} \dots$$

(3aq)

$$8 \sum_{n=1}^{\infty} \frac{0}{0} \stackrel{0}{\underset{0}{\parallel}} \dots$$

(3aq)

$$f(x) =$$

$$e^{\frac{1}{x}} \cdot x^{\frac{1}{x} + 1}$$

$$= -\frac{1}{x} \cdot \left(\frac{1}{x} + 1 \right)^{-2} \cdot x$$

$$x - (x+1)^2 \ln(x+1)$$

~~$$x^3 + x^2$$~~

$$= -\ln(x+1) - \frac{(x+1)}{x+1}$$

$$= \frac{1}{x} \cdot \left(\frac{1}{x} + 1 \right)^{-2} \cdot e$$

homogen

$$\begin{aligned} (1+x)^{-2} &= e^{\frac{1}{x} \ln(1+x)} \\ &= -e^{\frac{1}{x} \ln(1+x)} \cdot \left(-\frac{1}{x^2} \ln(1+x) + \frac{1}{x} \cdot \frac{1}{1+x} \right) \end{aligned}$$

$$\begin{aligned} &\quad \left(-\ln(1+x) + \frac{1}{x+1} \right) \cdot \frac{1}{x} \\ &\quad - (1+x)^{-1} \cdot \frac{1}{x} \end{aligned}$$

$$\begin{aligned} &\quad \left(\frac{1}{x} \cdot (x+1)^{-2} \cdot \ln(1+x) - \frac{1}{x^2} \cdot (x+1)^{-2} \right) \cdot \frac{1}{x} \\ &\quad - \frac{1}{x} \cdot (x+1)^{-1} \cdot \frac{1}{x} \end{aligned}$$

!!

$$= \frac{x^3}{x^2 + x} \cdot \frac{1}{x^2 + x} \cdot \frac{1}{x^2 + x} \cdot \frac{1}{x^2 + x}$$

!!

$$= \frac{x^3}{x^2 + x} \cdot \frac{1}{x^2 + x} \cdot \frac{1}{x^2 + x} \cdot \frac{1}{x^2 + x}$$

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$$= \frac{x^3}{x^2 + x} \cdot \frac{1}{x^2 + x} \cdot \frac{1}{x^2 + x} \cdot \frac{1}{x^2 + x}$$

!!

$$= \frac{x^3}{x^2 + x} \cdot \frac{1}{x^2 + x} \cdot \frac{1}{x^2 + x} \cdot \frac{1}{x^2 + x}$$

!!

$$\begin{aligned}
 & \left(\int_{-\infty}^{\infty} f(x) e^{-ixt} dx \right)^* = \int_{-\infty}^{\infty} f(x) e^{ixt} dx \\
 & = \int_{-\infty}^{\infty} f(x) \sum_{n=0}^{\infty} \frac{(ixt)^n}{n!} dx \\
 & = \sum_{n=0}^{\infty} \frac{i^n t^n}{n!} \int_{-\infty}^{\infty} x^n f(x) dx
 \end{aligned}$$

$$T(x) = \sum_{n=1}^{\infty} C_n \frac{1}{\pi} \int_{-\pi}^{\pi} f''(x') dx'$$

Herausnehmen des Beben

mit der Formel

$T(x)$ e monoton or steigend

$$\sum_{n=1}^{\infty} C_n \cos(nx)$$

$$T = \sum_{n=1}^{\infty} \int_{-\pi}^{\pi} [f(x) - T(x)]^2 dx$$

$$\sum_{n=1}^{\infty} (a_n + b_n) = \sum_{n=1}^{\infty} f''(x) dx$$

$$F \left[\int_{-\pi}^{\pi} f(x) dx \right] = \varepsilon (\text{g. zonenum})$$

$$\begin{aligned} & F \left[\int_{-\pi}^{\pi} f''(x) dx \right] = \varepsilon \\ & \quad + \int_{-\pi}^{\pi} F \left[f''(x) \right] dx = \varepsilon \\ & \quad + \int_{-\pi}^{\pi} \sum_{n=1}^{\infty} C_n \cos(nx) dx = \varepsilon \\ & \quad + \sum_{n=1}^{\infty} C_n \int_{-\pi}^{\pi} \cos(nx) dx = \varepsilon \\ & \quad + \sum_{n=1}^{\infty} C_n \cdot 0 = \varepsilon \end{aligned}$$

$$\begin{aligned} & \sum_{n=1}^{\infty} C_n = \sum_{n=1}^{\infty} \frac{1}{\pi} \int_{-\pi}^{\pi} f''(x) dx \\ & \quad + \sum_{n=1}^{\infty} \left(a_n + b_n \right) = \sum_{n=1}^{\infty} f''(x) dx \\ & \quad S_n(x) = \text{Summe bis } n \text{ von } f(x) \end{aligned}$$

$$\begin{aligned} & \sum_{n=1}^{\infty} C_n = \frac{1}{\pi} \int_{-\pi}^{\pi} f''(x) dx \\ & \quad + \sum_{n=1}^{\infty} f''(x) dx = \frac{1}{\pi} \int_{-\pi}^{\pi} f''(x) dx \\ & \quad 0 = \frac{1}{\pi} \int_{-\pi}^{\pi} f''(x) dx \end{aligned}$$

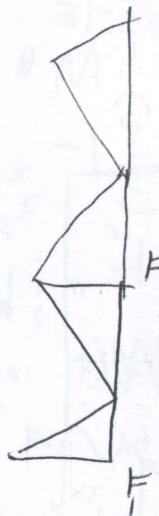
Produkt von Näherung

$$f(x) = |x| \neq \begin{cases} F & x \in [-\pi, 0] \\ -F & x \in (0, \pi] \end{cases}$$

$\forall x \in [-\pi, \pi]$

No Th Böolesches mo sagag.

monat mit monotonen Wertepunkten



$$f(-\pi) = f(\pi)$$

Heraus

und $f(x) - T(x)$ ist

$$\begin{cases} 0 & x \in [-\pi, 0] \\ -2x & x \in (0, \pi] \end{cases}$$

$$\begin{aligned}
 & f(x) = \frac{1}{x} \\
 & F(x) = \int_0^x \frac{1}{t} dt = \ln x \\
 & f''(x) = \frac{1}{x^2} \\
 & F''(x) = \frac{1}{x^2} \\
 & f'''(x) = -\frac{2}{x^3} \\
 & F'''(x) = -\frac{2}{x^3} \\
 & f^{(4)}(x) = \frac{6}{x^4} \\
 & F^{(4)}(x) = \frac{6}{x^4} \\
 & f^{(5)}(x) = -\frac{24}{x^5} \\
 & F^{(5)}(x) = -\frac{24}{x^5} \\
 & f^{(6)}(x) = \frac{120}{x^6} \\
 & F^{(6)}(x) = \frac{120}{x^6} \\
 & f^{(7)}(x) = -\frac{720}{x^7} \\
 & F^{(7)}(x) = -\frac{720}{x^7} \\
 & f^{(8)}(x) = \frac{5040}{x^8} \\
 & F^{(8)}(x) = \frac{5040}{x^8} \\
 & f^{(9)}(x) = -\frac{40320}{x^9} \\
 & F^{(9)}(x) = -\frac{40320}{x^9} \\
 & f^{(10)}(x) = \frac{302400}{x^{10}} \\
 & F^{(10)}(x) = \frac{302400}{x^{10}} \\
 & f^{(11)}(x) = -\frac{2516800}{x^{11}} \\
 & F^{(11)}(x) = -\frac{2516800}{x^{11}} \\
 & f^{(12)}(x) = \frac{2016000}{x^{12}} \\
 & F^{(12)}(x) = \frac{2016000}{x^{12}} \\
 & f^{(13)}(x) = -\frac{16704000}{x^{13}} \\
 & F^{(13)}(x) = -\frac{16704000}{x^{13}} \\
 & f^{(14)}(x) = \frac{13513500}{x^{14}} \\
 & F^{(14)}(x) = \frac{13513500}{x^{14}} \\
 & f^{(15)}(x) = -\frac{115920000}{x^{15}} \\
 & F^{(15)}(x) = -\frac{115920000}{x^{15}} \\
 & f^{(16)}(x) = \frac{101600000}{x^{16}} \\
 & F^{(16)}(x) = \frac{101600000}{x^{16}} \\
 & f^{(17)}(x) = -\frac{916800000}{x^{17}} \\
 & F^{(17)}(x) = -\frac{916800000}{x^{17}} \\
 & f^{(18)}(x) = \frac{831600000}{x^{18}} \\
 & F^{(18)}(x) = \frac{831600000}{x^{18}} \\
 & f^{(19)}(x) = -\frac{760000000}{x^{19}} \\
 & F^{(19)}(x) = -\frac{760000000}{x^{19}} \\
 & f^{(20)}(x) = \frac{700000000}{x^{20}} \\
 & F^{(20)}(x) = \frac{700000000}{x^{20}} \\
 & f^{(21)}(x) = -\frac{650000000}{x^{21}} \\
 & F^{(21)}(x) = -\frac{650000000}{x^{21}} \\
 & f^{(22)}(x) = \frac{610000000}{x^{22}} \\
 & F^{(22)}(x) = \frac{610000000}{x^{22}} \\
 & f^{(23)}(x) = -\frac{580000000}{x^{23}} \\
 & F^{(23)}(x) = -\frac{580000000}{x^{23}} \\
 & f^{(24)}(x) = \frac{560000000}{x^{24}} \\
 & F^{(24)}(x) = \frac{560000000}{x^{24}} \\
 & f^{(25)}(x) = -\frac{550000000}{x^{25}} \\
 & F^{(25)}(x) = -\frac{550000000}{x^{25}} \\
 & f^{(26)}(x) = \frac{540000000}{x^{26}} \\
 & F^{(26)}(x) = \frac{540000000}{x^{26}} \\
 & f^{(27)}(x) = -\frac{530000000}{x^{27}} \\
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 & f^{(30)}(x) = \frac{500000000}{x^{30}} \\
 & F^{(30)}(x) = \frac{500000000}{x^{30}} \\
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 & F^{(31)}(x) = -\frac{490000000}{x^{31}} \\
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 & f^{(41)}(x) = -\frac{390000000}{x^{41}} \\
 & F^{(41)}(x) = -\frac{390000000}{x^{41}} \\
 & f^{(42)}(x) = \frac{380000000}{x^{42}} \\
 & F^{(42)}(x) = \frac{380000000}{x^{42}} \\
 & f^{(43)}(x) = -\frac{370000000}{x^{43}} \\
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 & F^{(44)}(x) = \frac{360000000}{x^{44}} \\
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 & F^{(45)}(x) = -\frac{350000000}{x^{45}} \\
 & f^{(46)}(x) = \frac{340000000}{x^{46}} \\
 & F^{(46)}(x) = \frac{340000000}{x^{46}} \\
 & f^{(47)}(x) = -\frac{330000000}{x^{47}} \\
 & F^{(47)}(x) = -\frac{330000000}{x^{47}} \\
 & f^{(48)}(x) = \frac{320000000}{x^{48}} \\
 & F^{(48)}(x) = \frac{320000000}{x^{48}} \\
 & f^{(49)}(x) = -\frac{310000000}{x^{49}} \\
 & F^{(49)}(x) = -\frac{310000000}{x^{49}} \\
 & f^{(50)}(x) = \frac{300000000}{x^{50}} \\
 & F^{(50)}(x) = \frac{300000000}{x^{50}} \\
 & f^{(51)}(x) = -\frac{290000000}{x^{51}} \\
 & F^{(51)}(x) = -\frac{290000000}{x^{51}} \\
 & f^{(52)}(x) = \frac{280000000}{x^{52}} \\
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 & F^{(57)}(x) = -\frac{230000000}{x^{57}} \\
 & f^{(58)}(x) = \frac{220000000}{x^{58}} \\
 & F^{(58)}(x) = \frac{220000000}{x^{58}} \\
 & f^{(59)}(x) = -\frac{210000000}{x^{59}} \\
 & F^{(59)}(x) = -\frac{210000000}{x^{59}} \\
 & f^{(60)}(x) = \frac{200000000}{x^{60}} \\
 & F^{(60)}(x) = \frac{200000000}{x^{60}} \\
 & f^{(61)}(x) = -\frac{190000000}{x^{61}} \\
 & F^{(61)}(x) = -\frac{190000000}{x^{61}} \\
 & f^{(62)}(x) = \frac{180000000}{x^{62}} \\
 & F^{(62)}(x) = \frac{180000000}{x^{62}} \\
 & f^{(63)}(x) = -\frac{170000000}{x^{63}} \\
 & F^{(63)}(x) = -\frac{170000000}{x^{63}} \\
 & f^{(64)}(x) = \frac{160000000}{x^{64}} \\
 & F^{(64)}(x) = \frac{160000000}{x^{64}} \\
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 & F^{(65)}(x) = -\frac{150000000}{x^{65}} \\
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 & F^{(66)}(x) = \frac{140000000}{x^{66}} \\
 & f^{(67)}(x) = -\frac{130000000}{x^{67}} \\
 & F^{(67)}(x) = -\frac{130000000}{x^{67}} \\
 & f^{(68)}(x) = \frac{120000000}{x^{68}} \\
 & F^{(68)}(x) = \frac{120000000}{x^{68}} \\
 & f^{(69)}(x) = -\frac{110000000}{x^{69}} \\
 & F^{(69)}(x) = -\frac{110000000}{x^{69}} \\
 & f^{(70)}(x) = \frac{100000000}{x^{70}} \\
 & F^{(70)}(x) = \frac{100000000}{x^{70}} \\
 & f^{(71)}(x) = -\frac{90000000}{x^{71}} \\
 & F^{(71)}(x) = -\frac{90000000}{x^{71}} \\
 & f^{(72)}(x) = \frac{80000000}{x^{72}} \\
 & F^{(72)}(x) = \frac{80000000}{x^{72}} \\
 & f^{(73)}(x) = -\frac{70000000}{x^{73}} \\
 & F^{(73)}(x) = -\frac{70000000}{x^{73}} \\
 & f^{(74)}(x) = \frac{60000000}{x^{74}} \\
 & F^{(74)}(x) = \frac{60000000}{x^{74}} \\
 & f^{(75)}(x) = -\frac{50000000}{x^{75}} \\
 & F^{(75)}(x) = -\frac{50000000}{x^{75}} \\
 & f^{(76)}(x) = \frac{40000000}{x^{76}} \\
 & F^{(76)}(x) = \frac{40000000}{x^{76}} \\
 & f^{(77)}(x) = -\frac{30000000}{x^{77}} \\
 & F^{(77)}(x) = -\frac{30000000}{x^{77}} \\
 & f^{(78)}(x) = \frac{20000000}{x^{78}} \\
 & F^{(78)}(x) = \frac{20000000}{x^{78}} \\
 & f^{(79)}(x) = -\frac{10000000}{x^{79}} \\
 & F^{(79)}(x) = -\frac{10000000}{x^{79}} \\
 & f^{(80)}(x) = \frac{0}{x^{80}} \\
 & F^{(80)}(x) = \frac{0}{x^{80}}
 \end{aligned}$$

Хармонахын
Анализ
Рекурсивные

$$8 \int_0^{\pi} x \sum_{n=0}^{\infty} (-1)^n \frac{(-1)^n}{n!} dx = 8 \int_0^{\pi} x \sum_{n=0}^{\infty} (-1)^{2n} \frac{1}{n!} dx = 8 \int_0^{\pi} x \sum_{n=0}^{\infty} \frac{1}{n!} dx = 8 \int_0^{\pi} x e^x dx$$

$$\int_0^{\pi} x e^x dx = \left[x e^x - e^x \right]_0^{\pi} = \pi e^{\pi} - e^{\pi} + \int_0^{\pi} e^x dx = \pi e^{\pi} - e^{\pi} + \left[e^x \right]_0^{\pi} = \pi e^{\pi} - e^{\pi} + e^{\pi} - 1 = \pi e^{\pi}$$

$$\int_0^{\pi} x^5 e^x dx = \left[x^5 e^x - 5x^4 e^x \right]_0^{\pi} = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + \int_0^{\pi} 5x^4 e^x dx = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + \left[5x^4 e^x - 20x^3 e^x \right]_0^{\pi} = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + 5\pi^4 e^{\pi} - 20\pi^3 e^{\pi} = \pi^5 e^{\pi} - 20\pi^3 e^{\pi}$$

$$\int_0^{\pi} x^5 e^x dx = \left[x^5 e^x - 5x^4 e^x \right]_0^{\pi} = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + \int_0^{\pi} 5x^4 e^x dx = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + \left[5x^4 e^x - 20x^3 e^x \right]_0^{\pi} = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + 5\pi^4 e^{\pi} - 20\pi^3 e^{\pi} = \pi^5 e^{\pi} - 20\pi^3 e^{\pi}$$

$$\int_0^{\pi} x^5 e^x dx = \left[x^5 e^x - 5x^4 e^x \right]_0^{\pi} = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + \int_0^{\pi} 5x^4 e^x dx = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + \left[5x^4 e^x - 20x^3 e^x \right]_0^{\pi} = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + 5\pi^4 e^{\pi} - 20\pi^3 e^{\pi} = \pi^5 e^{\pi} - 20\pi^3 e^{\pi}$$

$$\int_0^{\pi} x^5 e^x dx = \left[x^5 e^x - 5x^4 e^x \right]_0^{\pi} = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + \int_0^{\pi} 5x^4 e^x dx = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + \left[5x^4 e^x - 20x^3 e^x \right]_0^{\pi} = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + 5\pi^4 e^{\pi} - 20\pi^3 e^{\pi} = \pi^5 e^{\pi} - 20\pi^3 e^{\pi}$$

$$\int_0^{\pi} x^5 e^x dx = \left[x^5 e^x - 5x^4 e^x \right]_0^{\pi} = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + \int_0^{\pi} 5x^4 e^x dx = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + \left[5x^4 e^x - 20x^3 e^x \right]_0^{\pi} = \pi^5 e^{\pi} - 5\pi^4 e^{\pi} + 5\pi^4 e^{\pi} - 20\pi^3 e^{\pi} = \pi^5 e^{\pi} - 20\pi^3 e^{\pi}$$

$$x = 0$$

