

Primitives

$$j(x) = \frac{2}{x-4} \quad \begin{array}{l} 2 \times \frac{1}{x-4} \\ u' \downarrow \quad u \rightarrow u' = 1 \end{array} \quad \checkmark$$

$$J(x) = 2 \times \ln(x-4)$$

$$d(x) = \frac{1}{2x} = \frac{1}{2} \times \frac{1}{x}$$

$$D(x) = \frac{1}{2} \ln(x)$$

$$n(x) = -e^x (1 - e^x) \quad \begin{array}{l} u \rightarrow u' = -e^x \\ u' u \rightarrow \frac{u^2}{2} \end{array}$$

$$N(x) = \frac{1}{-1} \times \frac{(1 - e^x)^2}{2}$$

$$a(x) = 8x^3 - 6x^2 + 1$$

$$A(x) = 8x \frac{x^4}{4} - 6x \frac{x^3}{3} + x$$

$$= 2x^4 - 2x^3 + x$$

$$y(x) = \frac{-2e^x}{\sqrt{e^x + 1}}$$

$u \rightarrow u' = e^x$

$$\frac{1}{\sqrt{x}} \longrightarrow 2\sqrt{x}$$

$$\frac{u'}{\sqrt{u}} \longrightarrow 2\sqrt{u}$$

$$S(x) = -2 \times 2\sqrt{e^x + 1}$$

$$f(x) = 5x(5x+2)^3$$

$u \rightarrow u' = 5$
 $x^3 \rightarrow \frac{3x^2}{4}$

$$f'(x) = \frac{1}{5} \times \frac{(5x+2)}{4}$$

$$z(x) = 4e^{2x}$$

$2 \times 2 = 4$
 $u \rightarrow u' = 2$

$$Z(x) = 2e^{2x}$$

$$b(x) = 9x^2 - 4x + 5$$

$$B(x) = 3x^3 - 2x^2 + 5x$$