

$$\int_2^6 x^3 dx$$

$$\text{indef } \int x^3 dx = \frac{x^4}{4} + C$$

$$\int_2^6 x^3 dx = \left. \frac{x^4}{4} \right|_2^6 = \frac{6^4}{4} - \frac{2^4}{4}$$

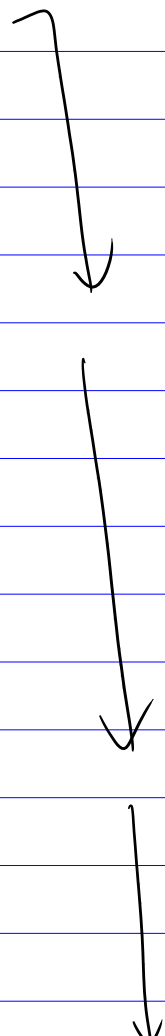
$$\int_3^{12} (5^x - 2x) dx$$

$$\text{indef } \int (5^x - 2x) dx = \frac{5^x}{\ln 5} - x^2 + C$$

$$\int_3^{12} (5^x - 2x) dx = \left. \left(\frac{5^x}{\ln 5} - x^2 \right) \right|_3^{12} = \left(\frac{5^{12}}{\ln 5} - 12^2 \right) - \left(\frac{5^3}{\ln 5} - 3^2 \right)$$

need parens after minus

See next page



$$\int_4^9 (3^x + \frac{1}{x}) dx$$

$$\text{indef: } \int (3^x + \frac{1}{x}) dx = \frac{3^x}{\ln 3} + \ln|x| + C$$

$$\int_4^9 (3^x + \frac{1}{x}) dx = \left(\frac{3^x}{\ln 3} + \ln|x| \right) \Big|_4^9 = \left(\frac{3^9}{\ln 3} + \ln|9| \right) - \left(\frac{3^4}{\ln 3} + \ln|4| \right)$$

$$\int_2^3 x^4(x+8) dx$$

$$\text{indef } \int x^4(x+8) dx = \int x^5 + 8x^4 dx = \frac{x^6}{6} + 8 \cdot \frac{x^5}{5} + C$$

$$\int_2^3 x^4(x+8) dx = \left(\frac{x^6}{6} + \frac{8x^5}{5} \right) \Big|_2^3 = \left(\frac{3^6}{6} + \frac{8(3)^5}{5} \right) - \left(\frac{2^6}{6} + \frac{8(2)^5}{5} \right)$$