$$\int \frac{B}{2} \frac{2x+2b}{x^2+2bx+c} \mathrm{d}x$$

$$g \coloneqq x^2+2bx+c \Rightarrow \frac{\mathrm{d}g}{\mathrm{d}x} = 2x+2b \Leftrightarrow \mathrm{d}x = \frac{\mathrm{d}g}{2x+2b}$$

$$= \frac{B}{2} \int \frac{1}{g} \, \mathrm{d}g$$
$$= \frac{B}{2} \ln|g| + C$$
$$= \frac{B}{2} \ln(x^2+2bx+c) + C$$

$$\int \frac{B}{2} \frac{2x+2b}{(x^2+2bx+c)^r} \mathrm{d}x$$

$$g \coloneqq x^2+2bx+c \Rightarrow \frac{\mathrm{d}g}{\mathrm{d}x} = 2x+2b \Leftrightarrow \mathrm{d}x = \frac{\mathrm{d}g}{2x+2b}$$

$$= \frac{B}{2} \int g^{-r} \, \mathrm{d}g$$
$$= \frac{B}{2} \frac{1}{1-r} g^{1-r} + C$$
$$= \frac{B}{2(1-r)} (x^2+2bx+c)^{1-r} + C$$

$$\int \frac{f'(x)}{f(x)} \, \mathrm{d}x = \ln|f(x)| + C$$

$$(\ln|f(x)| + C)' = \frac{1}{f(x)} \cdot f'(x) = \frac{f'(x)}{f(x)}$$