



$$(1) \quad y = c \Rightarrow y' = 0$$

$$(2) \quad y = x \Rightarrow y' = 1$$

$$(3) \quad y = c \cdot u \Rightarrow y' = c \cdot u'$$

$$(4) \quad y = u + v \Rightarrow y' = u' + v'$$

$$(5) \quad y = u \cdot v \Rightarrow y' = u \cdot v' + v \cdot u'$$

$$(6) \quad y = \frac{u}{v} \Rightarrow y' = \frac{v \cdot u' - u \cdot v'}{v^2}$$

$$(7) \quad y = u^\alpha, (\alpha \neq 0) \Rightarrow y' = \alpha \cdot u^{\alpha-1} \cdot u'$$

$$(8) \quad y = a^u (a > 0, a \neq 1) \Rightarrow y' = a^u \cdot \ln a \cdot u'$$

$$(9) \quad y = e^u \Rightarrow y' = e^u \cdot u'$$

$$(10) \quad y = \log_a u \Rightarrow y' = \frac{u'}{u} \log_a e$$

$$(11) \quad y = \ln u \Rightarrow y' = \frac{u'}{u}$$

$$(12) \quad y = u^v \Rightarrow y' = v \cdot u^{v-1} \cdot u' + u^v \cdot \ln u \cdot v'$$

( $u > 0$ )

$$(13) \quad y = \text{sen } u \Rightarrow y' = \text{cos } u \cdot u'$$

$$(14) \quad y = \text{cos } u \Rightarrow y' = -\text{sen } u \cdot u'$$

$$(15) \quad y = \text{tg } u \Rightarrow y' = \text{sec}^2 u \cdot u'$$

$$(16) \quad y = \text{cotg } u \Rightarrow y' = -\text{cosec}^2 u \cdot u'$$

$$(17) \quad y = \text{sec } u \Rightarrow y' = \text{sec } u \cdot \text{tg } u \cdot u'$$

$$(18) \quad y = \text{cosec } u \Rightarrow y' = -\text{cosec } u \cdot \text{cotg } u \cdot u'$$

$$(19) \quad y = \text{arc sen } u \Rightarrow y' = \frac{u'}{\sqrt{1-u^2}}$$

$$(20) \quad y = \text{arc cos } u \Rightarrow y' = \frac{-u'}{\sqrt{1-u^2}}$$

$$(21) y = \operatorname{arc} \operatorname{tg} u \Rightarrow y' = \frac{u'}{1 + u^2}$$

$$(22) y = \operatorname{arc} \operatorname{cotg} u \Rightarrow y' = \frac{-u'}{1 + u^2}$$

$$(23) y = \operatorname{arc} \operatorname{sec} u, |u| \geq 1 \Rightarrow y' = \frac{u'}{|u| \sqrt{u^2 - 1}}, |u| > 1$$

$$(24) y = \operatorname{arc} \operatorname{cosec} u, |u| \geq 1 \Rightarrow y' = \frac{-u'}{|u| \sqrt{u^2 - 1}}, |u| > 1.$$

$$(25) y = \operatorname{senh} u \Rightarrow y' = \cosh u \cdot u'$$

$$(26) y = \operatorname{cosh} u \Rightarrow y' = \operatorname{senh} u \cdot u'$$

$$(27) y = \operatorname{tgh} u \Rightarrow y' = \operatorname{sech}^2 u \cdot u'$$

$$(28) y = \operatorname{cotgh} u \Rightarrow y' = -\operatorname{cosech}^2 u \cdot u'$$

$$(29) y = \operatorname{sech} u \Rightarrow y' = -\operatorname{sech} u \cdot \operatorname{tgh} u \cdot u'$$

$$(30) y = \operatorname{cosech} u \Rightarrow y' = -\operatorname{cosech} u \cdot \operatorname{cotgh} u \cdot u'$$

$$(31) y = \operatorname{arg} \operatorname{senh} u \Rightarrow y' = \frac{u'}{\sqrt{u^2 + 1}}$$

$$(32) y = \operatorname{arg} \operatorname{cosh} u \Rightarrow y' = \frac{u'}{\sqrt{u^2 - 1}}, u > 1$$

$$(33) y = \operatorname{arg} \operatorname{tgh} u \Rightarrow y' = \frac{u'}{1 - u^2}, |u| < 1$$

$$(34) y = \operatorname{arg} \operatorname{cotgh} u \Rightarrow y' = \frac{u'}{1 - u^2}, |u| > 1$$

$$(35) y = \operatorname{arg} \operatorname{sech} u \Rightarrow y' = \frac{-u'}{u \sqrt{1 - u^2}}, 0 < u < 1$$

$$(36) y = \operatorname{arg} \operatorname{cosech} u \Rightarrow y' = \frac{-u'}{|u| \sqrt{1 + u^2}}, u \neq 0.$$