(8) If $y = \frac{u}{v}$, where u and v are the functions of x then

$$\frac{dy}{dx} = \frac{v\frac{du}{dx} - u\frac{dv}{dx}}{v^2}$$

(9) If y = sin x, then $\frac{dy}{dx} = \frac{d(\sin x)}{dx} = \cos x$

(10) If y = cos x, then $\frac{dy}{dx} = \frac{d(\cos x)}{dx} = -\sin x$

(11) If y = tan x, then

$$\frac{dy}{dx} = \frac{d(\tan x)}{dx} = \sec^2 x$$

(12) If y = sec x, then

$$\frac{dy}{dx} = \frac{d(\sec x)}{dx} = \sec x \,.\, \tan x$$

(13) If y = cot x, then

$$\frac{dy}{dx} = \frac{d(\cot x)}{dx} = -\operatorname{cosec}^2 x$$

(14) If y = cosec x, then

$$\frac{dy}{dx} = \frac{d(\operatorname{cosec} x)}{dx} = -\cot x.\operatorname{cosec} x$$

(15) If $y = \log_e(x)$ then

$$\frac{dy}{dx} = \frac{1}{x}$$

(16) If $y = e^x$, then

$$\frac{dy}{dx} = \frac{d(e^x)}{dx} = e^x$$