

## The Function $e^x$

$$y = e^n$$

$$y' = u' \cdot e^n$$

---

Ex .

$$y = e^x$$

$$y' = e^x$$

---

$$y = e^{2x}$$

$$y' = 2 \cdot e^{2x}$$

---

$$y = e^{-x}$$

$$y' = -1 \cdot e^{-x}$$

---

$$y = e^{-x^2}$$

$$y' = -2x \cdot e^{-x^2}$$

---

$$y = e^x + e^{-x}$$

$$y' = e^x - 1 \cdot e^{-x}$$

---

$$y = \frac{x}{e^x}$$

$$y' = \frac{1 \cdot e^x - e^x(x)}{(e^x)^2}$$

$$y' = \frac{e^x \cdot (1-x)}{e^{2x}}$$

$$y = e^{ax}$$

$$y' = a \cdot e^{ax}$$

---

$$y = e^{x^2-x}$$

$$y' = (2x-1) e^{x^2-x}$$

---