

n°1 p190

$$1) \exp(3) \times \exp(-2) = \exp(3-2)$$

$$\exp(3) \times \exp(-2) = \exp(1)$$

$$\exp(3) \times \exp(-2) = e$$

$$2) (\exp(-2))^3 = \exp(-2 \times 3)$$

$$(\exp(-2))^3 = \exp(-6)$$

$$3) \frac{\exp(-5)}{\exp(3)} = \exp(-5-3)$$

$$\frac{\exp(-5)}{\exp(3)} = \exp(-8)$$

n°2 p190

$$1) f(x) = 3 \exp(x) - \frac{1}{2} x^2 \quad f'(x) = 3 \exp(x) - \frac{1}{2} \times 2x$$

$$f'(x) = 3 \exp(x) - x$$

$$2) g(x) = \frac{\exp(x)}{4} \quad g(x) = \frac{1}{4} \times \exp(x) \quad g'(x) = \frac{1}{4} \times \exp(x)$$

$$3) h(x) = x \times \exp(x) \quad h'(x) = 1 \times \exp(x) + x \times \exp(x)$$

$$h'(x) = (1+x) \times \exp(x)$$

n°3 p190

$$1) e^x = 0 \quad \text{impossible car une exponentielle est toujours strictement positive.}$$

$$S = \emptyset$$

$$2) e^x = 1$$

$$e^x = e^0$$

$$x = 0 \quad S = \{0\}$$

$$3) e^{-x} = 1$$

$$-x = \frac{1}{e}$$

$$x = -\frac{1}{e} \quad S = \{-e^{-1}\}$$

$$4) e^{-x} = 0$$

$$x = -\frac{0}{e} \quad S = \{0\}$$

n°4 p190

$$1) e^0 \times e^2 = e^{0+2} = e^2$$

$$2) e^5 \times \frac{e^{-4}}{e^2} = e^5 \times e^{-4-2} = e^5 \times e^{-6} = e^{5-6} = e^{-1}$$

$$3) e \times e^{-1} = e^1 \times e^{-1} = e^{1-1} = e^0 = 1$$

$$4) e(2e - e^{-1}) = 2e^2 - e \times e^{-1} = 2e^2 - e^0 = 2e^2 - 1$$

$$5) \sqrt{e^8} = (e^8)^{\frac{1}{2}} = e^{\frac{8}{2}} = e^4$$

$$6) \frac{e}{\sqrt{e}} = \frac{\sqrt{e} \times \sqrt{e}}{\sqrt{e}} = \sqrt{e}$$