

$$\textcircled{12} \quad f(x) = 4x^3 - 2x \quad \hookrightarrow = -2$$

$$x = 4x^3 - 2x \quad ?$$

$$4x^3 - 2x = -2$$

$$f(-1) = -2$$

$$g(-2) = -1$$

$$f'(x) = 12x^2 - 2$$

$$f'(-1) = 10$$

$$g'(-2) = \frac{1}{f'(-1)} = \frac{1}{10}$$

$$(13) f(x) = \sqrt{x^2 + 6x} \quad x \geq 0 \quad b = 4$$

$$\sqrt{x^2 + 6x} = 4$$

$$x^2 + 6x - 16 = 0$$

$$(x + 8)(x - 2) = 0$$

$$x = 2$$

$$f(2) = 4$$

$$g(4) = 2$$

$$f'(x) = \frac{1}{2} (x^2 + 6x)^{-1/2} (2x + 6)$$

$$f'(2) = \frac{5}{4}$$

$$g'(4) = \frac{1}{f'(2)} = \frac{1}{5/4} = \frac{4}{5}$$

$$(15) \quad f(x) = \frac{1}{x+1} \quad b = \frac{1}{4}$$

$$\frac{1}{x+1} = \frac{1}{4}$$

$$x = 3$$

$$f(3) = \frac{1}{4}$$

$$g\left(\frac{1}{4}\right) = 3$$

$$f'(x) = \frac{(x+1) \cdot 0 - 1 \cdot 1}{(x+1)^2} = -\frac{1}{(x+1)^2}$$

$$g'\left(\frac{1}{4}\right) = \frac{1}{f'(3)} = \frac{1}{-\frac{1}{16}} = -16$$