

## Questions from Homework

$$\textcircled{c} \quad d = 2012 \text{ m} \quad d = \frac{500(\log P - 2)}{27}$$

$$P = \quad 2.012 = \frac{500(\log P - 2)}{27}$$

$$54.324 = 500(\log P - 2)$$

$$0.108648 = \log P - 2$$

$$2.108648 = \log P$$

$$\boxed{128.42 = P}$$

$$d = 2012 - 1005 = 1007 \text{ m} \quad \leftarrow \quad 1.007 = \frac{500(\log P - 2)}{27}$$

$$P = ?$$

$$27.189 = 500(\log P - 2)$$

$$0.054378 = \log P - 2$$

$$2.054378 = \log P$$

$$\boxed{113.34 = P}$$

$$\text{Pressure change} = 128.42 - 113.34 = \boxed{15.08 \text{ kPa}}$$

# Inverse Functions



## Calculating the Inverse of a Function

- 1) Replace  $f(x)$  with  $y$ .
- 2) Switch  $x$ 's and  $y$ 's.
- 3) Solve for  $y$ .
- 4) Replace  $y$  with  $f^{-1}(x)$ .

$$f(x) = \sqrt{x+4} - 3$$

$$\textcircled{1} y = \sqrt{x+4} - 3$$

$$\textcircled{2} x = \sqrt{y+4} - 3$$

$$\textcircled{3} (x+3)^2 = (\sqrt{y+4})^2$$

$$x^2 + 6x + 9 = y + 4$$

$$x^2 + 6x + 5 = y$$

$$y = x^2 + 6x + 5$$

$$\textcircled{4} f^{-1}(x) = x^2 + 6x + 5$$

$$f(x) = \frac{5x-3}{2x+1}$$

$$\textcircled{1} y = \frac{5x-3}{2x+1}$$

$$\textcircled{2} \frac{x}{1} = \frac{5y-3}{2y+1}$$

$$\textcircled{3} 2xy + x = 5y - 3$$

$$2xy - 5y = -x - 3$$

$$y(2x-5) = -x-3$$

$$y = \frac{-x-3}{2x-5}$$

$$\textcircled{4} f^{-1}(x) = \frac{-x-3}{2x-5}$$

$$f(x) = 2^x \quad (2, 4)$$

$$\textcircled{1} \quad y = 2^x$$

$$\textcircled{2} \quad x = 2^y$$

$$\textcircled{3} \quad y = \log_2 x$$

$$\textcircled{4} \quad f^{-1}(x) = \log_2 x \quad (4, 2)$$

# Homework