Worksheet 7
Exponential functions

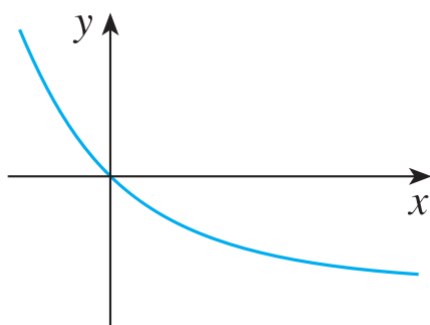**Exercise 1**   *Find the domain of each function.*
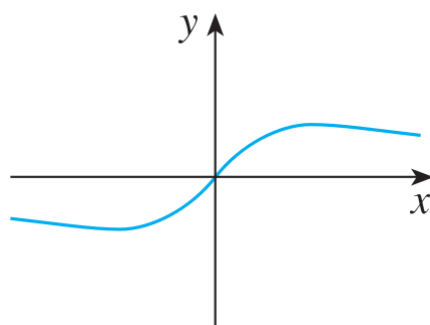
a) $f(x) = \cos(e^{-x})$ \qquad\qquad\qquad\qquad b) $g(x) = \sqrt{3 - 2^x}$

Exercise 2   *Determine if the following functions are one-to-one. If they are, sketch the graph of the inverse function.*

7.

8.

Exercise 3   *Find the inverse of each function.*

a. $f(x) = 1 - \sqrt{4 + 3x}$

b. $g(x) = e^{2x-1}$

Exercise 4   *Solve the following equations / inequalities.*

a. $2 < \ln x < 9$

b. $3^{x-1} = 7$

c. $\ln(\ln x) = 3$

d. $\ln x + \ln(x + 2) = 1$

Exercise 5   *Find the following limit (if it exists).*

a) $\lim_{x \to 2^+} e^{\frac{1}{2-x}}$ \qquad\qquad\qquad\qquad b) $\lim_{x \to 2^-} e^{\frac{1}{2-x}}$