Inverse Functions

- Find the formula for the inverse of the function.

$$f(x) = 1 + \sqrt{2 + 3x}$$

- Find $(f^{-1})'(a)$.

$$f(x) = 3 + x^2 + \tan(\frac{\pi x}{2}), \ \ -1 < x < 1, \ a = 3$$

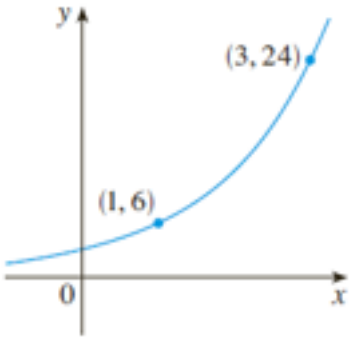
- Suppose f^{-1} is the inverse function of a differentiable function f and $f(4) = 5$, $f'(4) = \frac{2}{3}$. Find $(f^{-1})'(5)$.

Exponential Functions

- Starting with the graph of $y = e^x$, write the equation of the graph that results from

  1. shifting 2 units downward
  2. shifting 2 units to the right
  3. reflecting about the x-axis
  4. reflecting about the y-axis
  5. reflecting about the x-axis and then about the y-axis

- Find the exponential function $f(x) = Ca^x$ whose graph is



- Find the limit: $\lim_{x \to 2^+} e^{\frac{3}{2-x}}$

- Differentiate $F(t) = e^{t \sin(2t)}$

- Evaluate the integral $\int e^x \sqrt{1 + e^x} \, dx$

Logarithmic Functions

- Solve for x:
  1. $2^{x-5} = 3$
  2. $\ln x + \ln(x-1) = 1$
  3. $\ln(2x+1) = 2 - \ln x$
- Find the inverse function of $f(x) = e^{x^3}$.