Assignment 1

Problem statements and solutions:

Problem 1

The solution is given by the formula:

\[ y(x) = \frac{1}{2} \left( e^{x} + e^{-x} \right) \]

Problem 2

The solution is given by the formula:

\[ y(x) = \frac{1}{4} \left( 2x + 1 \right)^2 \]

Problem 3

The solution is given by the formula:

\[ y(x) = \frac{1}{2} \left( x^2 + 1 \right) \]

Problem 4

The solution is given by the formula:

\[ y(x) = \frac{1}{3} \left( x^3 - 1 \right) \]

Problem 5

The solution is given by the formula:

\[ y(x) = \frac{1}{4} \left( x^4 + 1 \right) \]

Problem 6

The solution is given by the formula:

\[ y(x) = \frac{1}{2} \left( x^2 + 1 \right) \]

Problem 7

The solution is given by the formula:

\[ y(x) = \frac{1}{4} \left( 2x + 1 \right)^2 \]

Problem 8

The solution is given by the formula:

\[ y(x) = \frac{1}{2} \left( e^{x} + e^{-x} \right) \]

Problem 9

The solution is given by the formula:

\[ y(x) = \frac{1}{4} \left( 2x + 1 \right)^2 \]

Problem 10

The solution is given by the formula:

\[ y(x) = \frac{1}{2} \left( x^2 + 1 \right) \]

Problem 11

The solution is given by the formula:

\[ y(x) = \frac{1}{3} \left( x^3 - 1 \right) \]

Problem 12

The solution is given by the formula:

\[ y(x) = \frac{1}{4} \left( x^4 + 1 \right) \]

Problem 13

The solution is given by the formula:

\[ y(x) = \frac{1}{2} \left( x^2 + 1 \right) \]