Problems A

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Ordinary Differential Equations - MA 266
Problem 1
Verify that the function

\[ y = (1 - \sin x)^{-1/2} \]

is an explicit solution of the first order differential equation

\[ 2y' = y^3 \cos x \]
Problem 2
Verify that the function

\[ y = \frac{1}{4 - x^2} \]

is an explicit solution of the first order differential equation

\[ y' = 2xy^2 \]
Problem 3
Verify that the function

\[ y = x + 4\sqrt{x + 2} \]

is an explicit solution of the first order differential equation

\[ (y - x)y' = y - x + 8 \]