Calculus

Name_____ ID: 1

Particular Solutions Worksheet 1

Date_____ Period____

For each problem, find the particular solution of the differential equation that satisfies the initial condition.

1) $\dfrac{dy}{dx} = \dfrac{2x}{e^{2y}}$, $y(3) = \dfrac{\ln 19}{2}$

2) $\dfrac{dy}{dx} = 3xy^2$, $y(-1) = -\dfrac{1}{3}$

3) $\dfrac{dy}{dx} = e^{x-y}$, $y(1) = \ln(e+3)$

4) $\dfrac{dy}{dx} = \dfrac{x^3}{y^2}$, $y(2) = \sqrt[3]{15}$

5) $\dfrac{dy}{dx} = \dfrac{3e^x}{y^2}$, $y(-2) = \dfrac{\sqrt[3]{2e^3 + 9e}}{e}$

6) $\dfrac{dy}{dx} = x\sqrt{y}$, $y(-1) = \dfrac{25}{16}$

Answers to Particular Solutions Worksheet 1 (ID: 1)

1) $y = \dfrac{\ln\left(2x^2 + 1\right)}{2}$

2) $y = -\dfrac{2}{3x^2 + 3}$

3) $y = \ln\left(e^x + 3\right)$

4) $y = \sqrt[3]{\dfrac{3x^4}{4} + 3}$

5) $y = \sqrt[3]{9e^x + 2}$

6) $y = \left(\dfrac{x^2}{4} + 1\right)^2$