

AP Calculus AB
4.2 Day 2 Practice

Name KEY
Period _____

1. Let $3x^2 - 2y^2 = 6$. Find $\frac{d^2y}{dx^2}$

A) $\frac{3x}{2y}$

B) $\frac{3y-3x}{2y^2}$

C) $\frac{3x-3y}{2y^2}$

D) $\frac{9x^2 - 6y^2}{4y^3}$

E) $\frac{6y^2 - 9x^2}{4y^3}$

2. If $\frac{dy}{dx} = 1 + \sin y$, then $\frac{d^2y}{dx^2} =$

A) $\cos y$

B) $-\cos y$

C) $\cos^2 y$

D) $(1 + \sin y)^2$

E) $\cos y + \sin y \cos y$

3. Let $y = x^{\frac{7}{5}}$. Find $\frac{dy}{dx}$.

$\frac{7}{5} x^{\frac{2}{5}}$

4. Let $y = (3 - 2x)^{\frac{3}{4}}$. Find $\frac{dy}{dx}$.

$-\frac{3}{2}(3-2x)^{-\frac{1}{4}}$

or

$\frac{-3}{2(3-2x)^{1/4}}$

5. Which of the following could be true if $g''(t) = \frac{1}{4}t^{-\frac{5}{4}}$? Circle all possible statements.

A) $g'(t) = \frac{1}{5}t^{\frac{1}{5}}$

B) $g'''(t) = \frac{-5}{\sqrt[5]{t}}$

C) $g(t) = 7t - 11 + \frac{25}{6}t^{\frac{6}{5}}$

D) $g'(t) = 5\sqrt[5]{t} - 5$