

Student Name: \_\_\_\_\_

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## Derivatives using Quotient Rule

Sheet 2

Find the derivatives using quotient rule:

$$y = \frac{2x^3}{4-x}$$

$$y = \frac{x}{x^2+1}$$

$$y = \frac{4 \sin x}{2x + \cos x}$$

$$y = \frac{1 + \ln x}{x^2 - \ln x}$$

$$y = \frac{x^{\frac{7}{5}} - x^{\frac{8}{5}}}{\sqrt[5]{x}}$$

$$y = \frac{\sin x}{\tan x}$$

$$y = \frac{\sin 18x}{6x}$$

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Answer key

Derivatives using Quotient Rule

Sheet 2

$$\frac{dy}{dx} = \frac{4x^2(6-x)}{(4-x)^2}$$

$$\frac{dy}{dx} = \frac{1-x^2}{(x^2+1)^2}$$

$$\frac{dy}{dx} = \frac{8x \cos x}{(2x)^2}$$

**PREVIEW**

$$\frac{2e^x - 7x^2}{x^2}$$

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$$\frac{dy}{dx} = \frac{\left(\frac{1}{x}\right)(x^2 - 7)}{(x^2 - 7)^2}$$

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$$\frac{-e^{-2x}}{(x^2 - 7)^2}$$

$$\frac{dy}{dx} = \frac{6x^{\frac{3}{5}} - 7}{5x^{\frac{2}{5}}}$$

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$$\frac{dy}{dx} = -\sin x$$

$$\frac{dy}{dx} = \frac{18x \cos 18x - \sin 18x}{6x^2}$$