Questions: The quotient rule

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Summary

A selection of questions for the study guide on the quotient rule.

Before attempting these questions, it is highly recommended that you read Guide: The quotient rule..

Differentiate the following functions using the quotient rule.

1.1.
$$\frac{e^x}{x}$$

1.2.
$$\frac{e^{7x}}{x^5}$$

$$1.3. \quad \frac{\ln(x)}{x^2}$$

1.4.
$$\frac{e^{-x}}{x^2 + 11x - 2}$$

1.5.
$$\frac{x^3 + 5x - 5}{x^2 + 3}$$

1.6.
$$\frac{\cos(x)}{x^2 + 3x - 1}$$

1.7.
$$\frac{\tan(x)}{\cos(x)}$$

$$1.8. \quad \frac{\ln(3x)}{\ln(5) + x}$$

$$1.9. \qquad \frac{x^2 + 3x}{\cos(x)}$$

1.10.
$$\frac{\ln(x)}{x^3 + 3}$$
.

$$1.11. \qquad \frac{5\tan(x)}{x}.$$

1.12.
$$\frac{3x^7 - 27x^2 + 2\sqrt{x}}{x^2 + 1}.$$

1.13.
$$\frac{e^{-3x}}{e^{2x}}$$

$$1.14. \qquad \frac{e^3x^3}{e^x}.$$

1.15.
$$\frac{x^5}{x^5+1}$$
.

1.16.
$$\frac{\tan(x)}{\ln(x)}$$

$$1.17. \quad \frac{3\sin(x)}{\ln(x)}$$

$$1.18. \quad \frac{\tan(x) + 5x}{\sec(3x)}$$

After attempting the questions above, please click this link to find the answers.

Version history and licensing

v1.0: initial version created 05/25 by Sara Delgado Garcia as part of a University of St Andrews VIP project.

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