

## 3.2 Hmwk - The Product and Quotient Rules (Homework)

 INSTRUCTOR

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Past Due **Due Date: SAT, FEB 28, 2026 11:59 PM CST**

**Current Score: 20 / 20 POINTS | 100.0 %**

Due date has passed. No changes can be made without an approved extension request.  
 You may not be granted an extension if you have already viewed the answer key.

 **VIEW ANSWER KEY**

### Scoring and Assignment Information ^

QUESTION	1	2	3	4	5	6	7	8	9	10
POINTS	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2

### Assignment Submission

For this assignment, you submit answers by question parts. The number of submissions remaining for each question part only changes if you submit or change the answer.

## Assignment Scoring

Your best submission for each question part is used for your score.

### 1. [2 / 2 Points]

DETAILS

MY NOTES

PREVIOUS ANSWERS

ASK YOUR TEACHER

PRACTICE ANOTHER

S<sub>Calc</sub>ET9 3.2.003.

Differentiate.

$$y = (5x^2 + 7)(3x + 8)$$

$y' =$

\$\$\$45x^2+80x+21

✓ Nice work.

#### Resources

[Read It](#)

### 2. [2 / 2 Points]

DETAILS

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ASK YOUR TEACHER

PRACTICE ANOTHER

S<sub>Calc</sub>ET9 3.2.011.

Differentiate.

$$g(t) = \frac{5 - 9t}{7t + 6}$$

$g'(t) =$

\$\$\$-89(7t+6)2

✓ Good job.

#### Resources

[Read It](#)

3. [2 / 2 Points]

DETAILS

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PRACTICE ANOTHER

S CalcET9 3.2.036.EP.

Consider the following curve.

$$y = \frac{1+x}{6+e^x}$$

Find  $y'(x)$ .

$y'(x) =$

$\frac{6-xe^x}{(6+e^x)^2}$

✓ Good job!

Find an equation of the tangent line to the given curve at the point  $\left(0, \frac{1}{7}\right)$ .

$y =$

$\frac{4}{9}x + \frac{17}{9}$

✓ Nice job!

**Resources**

[Read It](#)

4. [2 / 2 Points]

DETAILS

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ASK YOUR TEACHER

PRACTICE ANOTHER

S CalcET9 3.2.027.

Differentiate.

$$f(x) = \frac{x^6 e^x}{x^6 + e^x}$$

$f'(x) =$

$5ex(x^7+6ex)(x^6+ex)^2$

✓ Fantastic work!

Resources

[Read It](#)

5. [2 / 2 Points]

DETAILS

MY NOTES

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ASK YOUR TEACHER

PRACTICE ANOTHER

S CalcET9 3.2.016.

Differentiate.

$$y = \frac{\sqrt{x}}{\sqrt{x+9}}$$

$y' =$

$92\sqrt{x}(\sqrt{x+9})^2$

✓ Good work.

Resources

[Read It](#)

6. [2 / 2 Points]

DETAILS

MY NOTES

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ASK YOUR TEACHER

PRACTICE ANOTHER

S CalcET9 3.2.021.

Differentiate.

$$V(t) = (t + 7e^t)\sqrt{t}$$

$V'(t) =$

$3t + 14te^t + 7e^{2t}\sqrt{t}$

✔ That's right!

Resources

[Read It](#)

7. [2 / 2 Points]

DETAILS

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ASK YOUR TEACHER

PRACTICE ANOTHER

S CalcET9 3.2.008.

Differentiate.

$$g(x) = (x + 9\sqrt{x})e^x$$

$g'(x) =$

$e^x(x + 9\sqrt{x} + 1 + 92\sqrt{x})$

✔ Nice work!

Resources

[Read It](#)

## 8. [2 / 2 Points]

DETAILS

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ASK YOUR TEACHER

PRACTICE ANOTHER

SCalcET9 3.2.040.

A graphing calculator is recommended.

The graph of the function  $f(x) = \frac{x}{1+x^2}$  is called a **serpentine**.

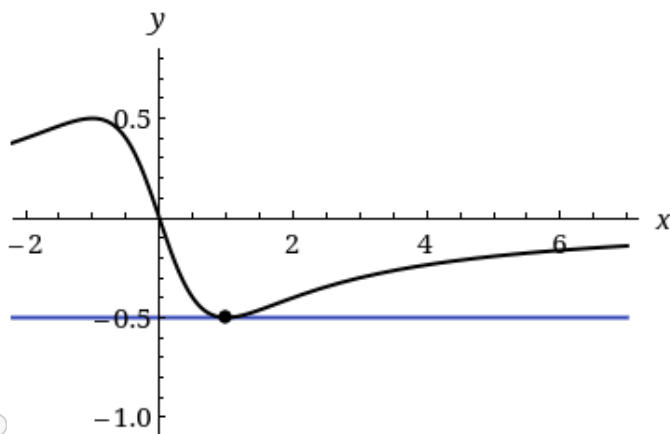
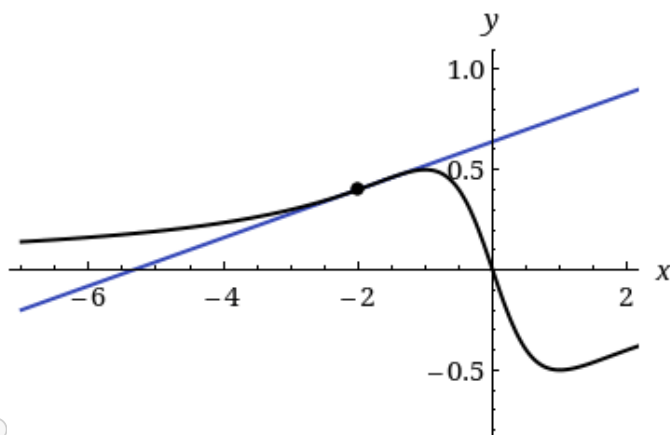
- (a) Find an equation of the tangent line to this curve at the point  $(2, 0.40)$ .

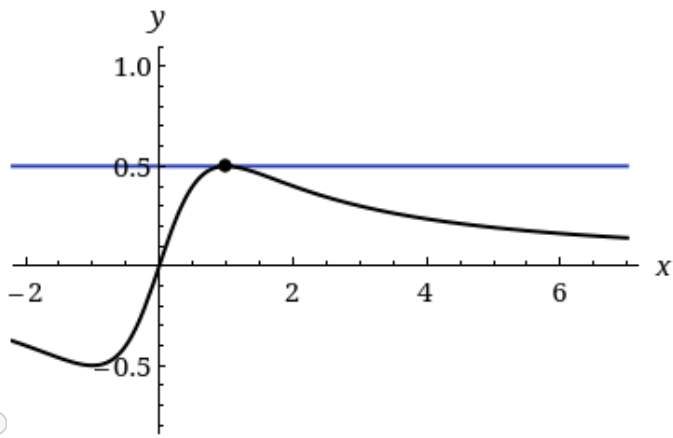
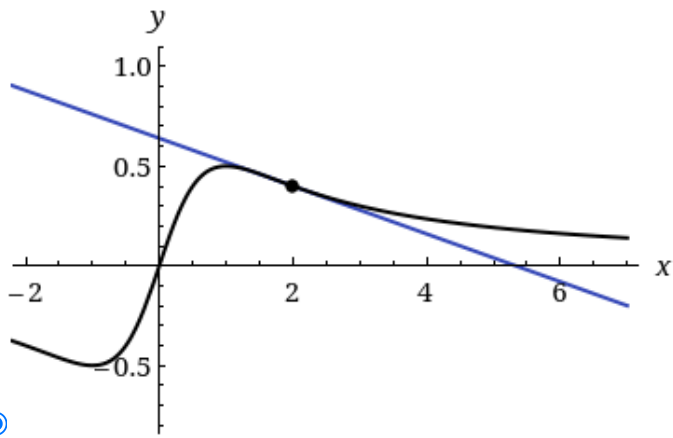
$y =$

$-0.12x + 0.64$

✓ Great!

- (b) Illustrate part (a) by graphing the curve and the tangent line on the same screen.





That's right!

### Resources

[Read It Watch It](#)

9. [2 / 2 Points]

DETAILS

MY NOTES

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ASK YOUR TEACHER

PRACTICE ANOTHER

S<sub>CalcET9</sub> 3.2.039.

A graphing calculator is recommended.

The curve  $y = \frac{1}{1+x^2}$  is called a **witch of Maria Agnesi**.

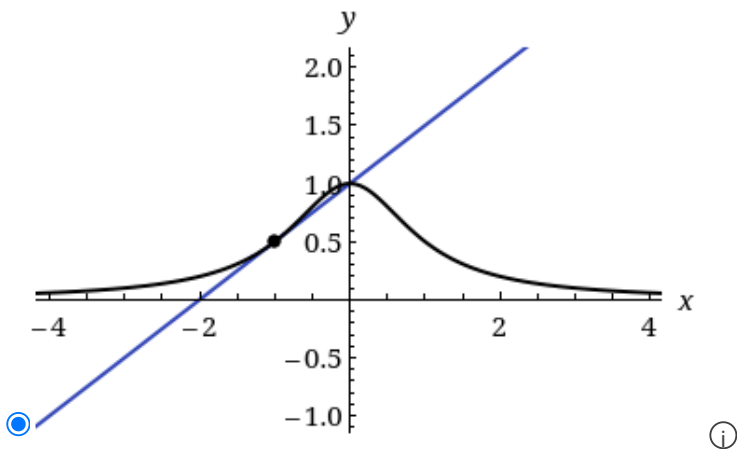
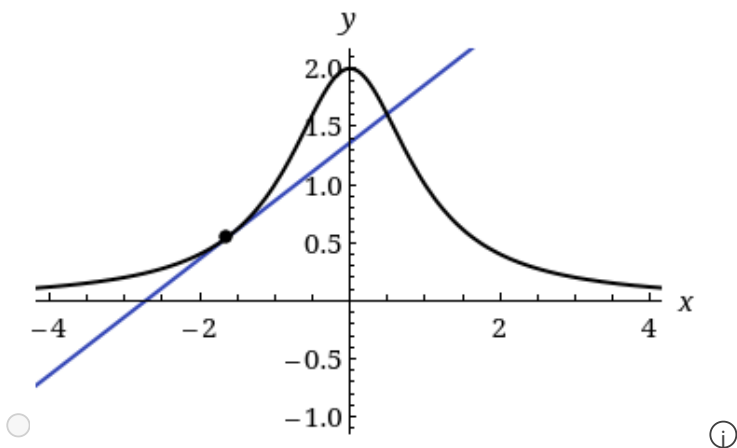
- (a) Find an equation of the tangent line to this curve at the point  $\left(-1, \frac{1}{2}\right)$ .

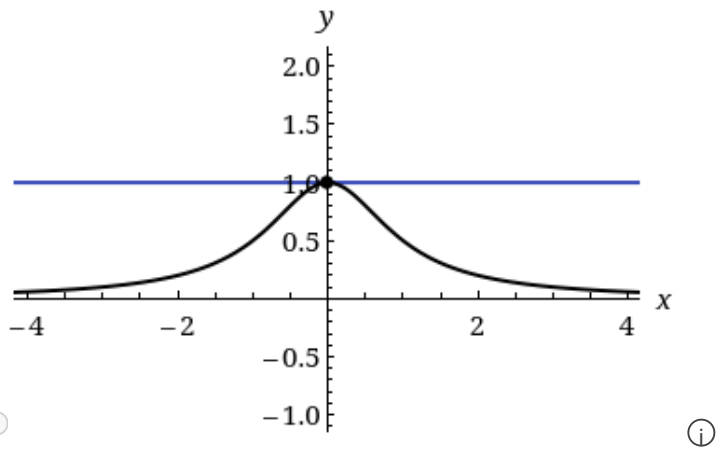
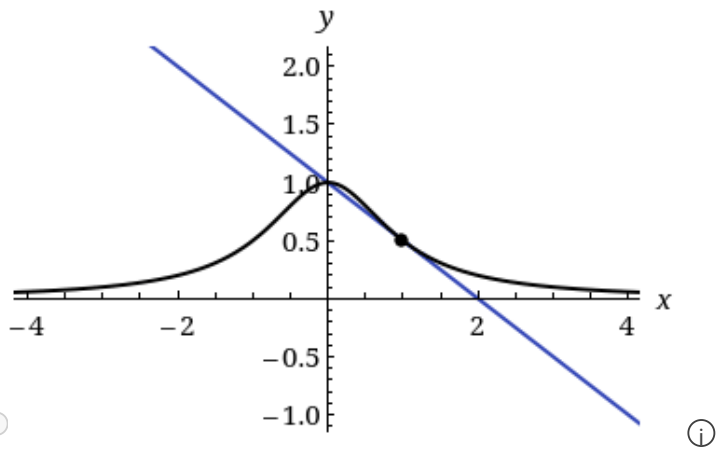
y =

$12x+1$

✓ Outstanding!

- (b) Illustrate part (a) by graphing the curve and the tangent line on the same screen.





✓ Amazing job!

### Resources

[Read It Watch It](#)

10. [2 / 2 Points]

DETAILS

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ASK YOUR TEACHER

PRACTICE ANOTHER

SCalcET9 3.2.038.

Find equations of the tangent line and normal line to the given curve at the specified point.

$$y = 8x + 5xe^x, \quad (0, 0)$$

tangent line  $y = 13x$

✓ Impressive work!

normal line  $y = -113x$

✓ You're right!

### Resources

[Read It](#)

[Home](#) [My Assignments](#)