

1. (1 point) set5/s2\_2\_16.pg

If

$$f(x) = \frac{\sqrt{x}-3}{\sqrt{x}+3}$$

find  $f'(x)$ .

Find  $f'(2)$ .

Answer(s) submitted:

- 
- 

(incorrect)

Correct Answers:

- $(3/\sqrt{x}) / ((\sqrt{x} + 3)^2)$
- 0.108867832227675

2. (1 point) set5/ps3prob9.pg

If  $f(x) = \frac{2x+8}{5x+6}$ , find  $f'(x)$ .

Find  $f'(5)$ .

Answer(s) submitted:

- 
- 

(incorrect)

Correct Answers:

- $(2*6 - 5*8) / (5*x + 6)^2$
- -0.0291363163371488

3. (1 point) set5/s2\_4\_24.pg

If

$$f(x) = \frac{3 \sin x}{1 + \cos x}$$

find  $f'(x)$ .

Find  $f'(2)$ .

Answer(s) submitted:

- 
- 

(incorrect)

Correct Answers:

- $(3*\cos(x)*1 + 3) / (1+\cos(x))^2$
- 5.13827823122214

4. (1 point) set5/s2\_4\_25.pg

If  $f(x) = \frac{4 \tan x}{x}$ , find  $f'(x)$ .

Find  $f'(2)$ .

Answer(s) submitted:

- 
- 

(incorrect)

Correct Answers:

- $4 / (\cos(x)^2*x) - 4*\tan(x) / x^2$
- 13.7338382713454

5. (1 point) set5/s2\_4\_26.pg

If

$$f(x) = \frac{\tan x - 2}{\sec x}$$

find  $f'(x)$ .

Find  $f'(3)$ .

Answer(s) submitted:

- 
- 

(incorrect)

Correct Answers:

- $\cos(x) + 2*\sin(x)$
- -0.707752480480711

6. (1 point) set5/s2\_4\_30a.pg

Let

$$f(x) = 2x \sin x \cos x$$

$f'(\frac{3\pi}{2}) =$  \_\_\_\_\_

Answer(s) submitted:

-

(incorrect)

Correct Answers:

- $-9.42477796076938$

**7. (1 point)** set5/s2\_5\_1.pg

If  $f(x) = (x^2 + 4x + 4)^2$ , find  $f'(x)$ .

Find  $f'(2)$ .

Answer(s) submitted:

- 
- 

(incorrect)

Correct Answers:

- $(2 * (x^{**2} + 4 * x + 4) ** (2 - 1)) * (2 * x + 4)$
- $256$

**8. (1 point)** set5/s2\_5\_3.pg

If  $f(x) = (2x + 7)^{-2}$ , find  $f'(x)$ .

Find  $f'(4)$ .

Answer(s) submitted:

- 
- 

(incorrect)

Correct Answers:

- $(-2 * (2 * x + 7) ** (-2 - 1)) * (2)$
- $-0.00118518518518519$

**9. (1 point)** set5/s2\_5\_4.pg

If  $f(x) = \sin(x^5)$ , find  $f'(x)$ .

Find  $f'(1)$ .

Answer(s) submitted:

- 
- 

(incorrect)

Correct Answers:

- $(\cos(x^{**5})) * (5 * x^{** (5 - 1)})$
- $2.7015115293407$

**10. (1 point)** set5/s2\_5\_5.pg

If  $f(x) = \sin^3 x$ , find  $f'(x)$ .

Find  $f'(4)$ .

Answer(s) submitted:

- 
- 

(incorrect)

Correct Answers:

- $(3 * \sin(x) ** (3 - 1)) * (\cos(x))$
- $-1.12312318469708$

**11. (1 point)** set5/s2\_5\_7.pg

If  $f(x) = \tan 2x$ , find  $f'(x)$ .

Find  $f'(5)$ .

Answer(s) submitted:

- 
- 

(incorrect)

Correct Answers:

- $(1 / \cos(2 * x) ** 2) * 2$
- $2.84074352516686$

**12. (1 point)** set5/s2\_5\_12a.pg

Let

$$f(x) = \sin(\cos(x^2))$$

$$f'(x) = \underline{\hspace{2cm}}$$

Answer(s) submitted:

- 

(incorrect)

Correct Answers:

- $-\cos(\cos(x^{**2})) * \sin(x^{**2}) * 2 * x^{** (2 - 1)}$

**13. (1 point)** set5/ur\_dr\_5\_20.pg

Let

$$f(x) = (3x^2 + 7)^4 (-6x^2 + 8)^{14}$$

$$f'(x) = \underline{\hspace{2cm}}$$

Answer(s) submitted:

-

(incorrect)

Correct Answers:

- $((3*(x**2)+7)**(3)) * ((-6*(x**2)+8)**(13)) * (-64*(x**18))$

14. (1 point) set5/s2\_7\_18.pg

Let  $f(x) = \frac{1-2x}{1+2x}$ . Then  $f'(2)$  is \_\_\_\_\_

and  $f''(2)$  is \_\_\_\_\_

and  $f'''(2)$  is \_\_\_\_\_

Answer(s) submitted:

- .
- .
- .

(incorrect)

Correct Answers:

- 0.16
- 0.128
- 0.1536

15. (1 point) set5/nder1.pg

Find the 122 th derivative of the function  $f(x) = \cos(x)$ .

The answer is function \_\_\_\_\_

Answer(s) submitted:

- .

(incorrect)

Correct Answers:

- $((-1)**1) * \cos(x)$

16. (1 point) set5/golden\_math1210fall2002\_p5\_17.pg

The rate of change of electric charge with respect to time is called current. Suppose that  $\frac{1}{3}t^3 + t$  coulombs of charge flow through a wire in  $t$  seconds. (a) Find the current in amperes (coulombs per second) after 3 seconds. (b) When will a 20-ampere fuse in the line blow?

a) Current after 3 seconds: \_\_\_\_\_ amperes.

b) A 20-ampere fuse will blow at: \_\_\_\_\_ seconds.

Answer(s) submitted:

- .
- .

(incorrect)

Correct Answers:

- 10
- 4.35889894354067

17. (1 point) set5/golden\_math1210fall2002\_p5\_19.pg

Find all points on the graph of  $y = \frac{1}{3}x^3 + x^2 - x$  where the tangent line has slope 1.

(\_\_\_\_\_, \_\_\_\_\_)

(\_\_\_\_\_, \_\_\_\_\_)

Instruction: Enter the points in order of increasing  $x$ -coordinate.

Answer(s) submitted:

- .
- .
- .
- .

(incorrect)

Correct Answers:

- 2.73205080756888
- 3.39871747423554
- 0.732050807568877
- 0.0653841409022105

18. (1 point) set5/golden\_math1210fall2002\_p5\_20.pg

A space traveller is moving from left to right along the curve  $y = x^2$ . When she shuts off the engines, she will continue travelling along the tangent line at the point where she is at that time. At what point should she shut off the engines in order to reach the point (4,15)?

She should shut off the engine at (\_\_\_\_\_, \_\_\_\_\_)

Answer(s) submitted:

- .
- .

(incorrect)

Correct Answers:

- 3
- 9

19. (1 point) set5/golden\_math1210fall2002\_p5\_22.pg

At time  $t$  seconds, the center of a bobbing cork is  $2\sin t$  centimeters above (or below) water level. What is the velocity of the cork at  $t = 0, \pi/2, \pi$ ?

Velocity at  $t = 0$ : \_\_\_\_\_ cm/s.

Velocity at  $t = \pi/2$ : \_\_\_\_\_ cm/s.

Velocity at  $t = \pi$ : \_\_\_\_\_ cm/s.

Answer(s) submitted:

- .
- .
- .

(incorrect)

Correct Answers:

- 2
- 0
- 2