

1.(1 pt) If  $f(x) = (x^2 + 2x + 3)^3$ , find  $f'(x)$ .

Find  $f'(3)$ .

2.(1 pt) Let

$$f(x) = (x^3 + 4x + 5)^3$$

$$f'(x) =$$

$$f'(5) =$$

3.(1 pt) If  $f(x) = (2x + 4)^{-3}$ , find  $f'(x)$ .

Find  $f'(2)$ .

4.(1 pt) If  $f(x) = \sqrt{5x + 8}$ , find  $f'(x)$ .

Find  $f'(2)$ .

5.(1 pt) Let

$$f(x) = \sqrt{2x^2 + 3x + 3}$$

$$f'(x) =$$

$$f'(3) =$$

6.(1 pt) If  $f(x) = \sin(x^3)$ , find  $f'(x)$ .

Find  $f'(5)$ .

7.(1 pt) If  $f(x) = \sin^3 x$ , find  $f'(x)$ .

Find  $f'(4)$ .

8.(1 pt) Let

$$f(x) = 2 \sin^5 x$$

$$f'(x) =$$

9.(1 pt) If  $f(x) = \tan 2x$ , find  $f'(x)$ .

Find  $f'(4)$ .

10.(1 pt) Let

$$f(x) = \sin(9x + 2)$$

$$f'(x) =$$

11.(1 pt) If  $f(x) = \cos(5x + 7)$ , find  $f'(x)$ .

Find  $f'(2)$ .

12.(1 pt) Let

$$f(x) = -3 \sec(6x)$$

$$f'(x) =$$

13.(1 pt) If  $f(x) = 5 \sec(5x)$ , find  $f'(x)$ .

Find  $f'(2)$ .

14.(1 pt) Let

$$f(x) = 6 \cos(\sin x)$$

$$f'(x) =$$

15.(1 pt) If  $f(x) = \sin(\sin(x))$ , find  $f'(x)$ .

Find  $f'(4)$ .

16.(1 pt)

Let  $F(x) = f(x^8)$  and  $G(x) = (f(x))^8$ . You also know that  $a^7 = 10, f(a) = 3, f'(a) = 6, f'(a^8) = 10$ .

Find  $F'(a) =$  and  $G'(a) =$ .

17.(1 pt)

Let  $F(x) = f(f(x))$  and  $G(x) = (F(x))^2$ . You also know that  $f(8) = 4, f(4) = 3, f'(4) = 4, f'(8) = 10$ .

Find  $F'(8) =$  and  $G'(8) =$ .

18.(1 pt) If  $\frac{d}{dx}(f(3x^4)) = 7x^2$ .

Calculate  $f'(x) =$

19.(1 pt) Let

$$f(x) = -5e^{x \cos x}$$

$$f'(x) =$$

20.(1 pt) Let

$$f(x) = (3x^2 - 4)^7(-4x^2 - 9)^{13}$$

$$f'(x) =$$

21.(1 pt) Let

$$f(x) = 9 \cos(\cos(x^4))$$

$$f'(x) =$$

22.(1 pt) If  $f(x) = \cos(\sin(x^2))$ , find  $f'(x)$ .

Find  $f'(1)$ .

23.(1 pt) Let

$$f(x) = \sqrt{\sin(e^{x^5 \cos(x)})}$$

$$f'(x) =$$