1. (1 pt) If $f(x) = (3x^2 - 4)(6x + 3)$, find $f'(x)$.

Find $f'(2)$.

2. (1 pt) If

$$f(x) = \frac{4x+2}{7x+6},$$

find $f'(x)$.

Find $f'(3)$.

3. (1 pt) If $f(x) = 3x\sqrt{x} + \frac{5}{x^2\sqrt{x}}$, find $f'(x)$.

Find $f'(1)$.

4. (1 pt) Find the derivative of the function

$$g(x) = (4x^2 + 3x - 2)e^x$$

$g'(x) =$ _____

5. (1 pt) If $f(x) = 2\sin x + 4\cos x$, then
$f'(x) =$

and $f'(1)$.

6. (1 pt) Let

$$f(x) = [\ln x]^2$$

$f'(x) =$ _____
$f'(e^2) =$ _____

7. (1 pt) Let

$$f(x) = \ln(x^8)$$

$f'(x) =$ _____
$f'(e^4) =$ _____

8. (1 pt) If $f(x) = \sqrt{5x+6}$, find $f'(x)$.

Find $f'(2)$.

9. (1 pt) If $f(x) = \sin^4 x$, find $f'(x)$.

Find $f'(1)$.

10. (1 pt) Let

$$f(x) = -8e^{x\cos x}$$

$f'(x) =$ _____