

1. Consider the function  $f(x) = 5 - 4 \sin(3x)$ . The derivative satisfies  
 $f'(x) = -4(3) \cos(3x) = -12 \cos(3x)$ .

2. Consider the function  $f(x) = 2 \cos(7x) - x^2$ . The derivative satisfies  
 $f'(x) = -2(7) \sin(7x) - 2x = -14 \sin(7x) - 2x$ .

3. Consider the function  $f(x) = 2e^{-6x} + 5 \cos(2(x-9)) - 8 \sin(4(x-4))$ . The derivative satisfies  
 $f'(x) = -12e^{-6x} - 10 \sin(2(x-9)) - 32 \cos(4(x-4))$ .