1. $f(x) = 5x^3$

$= 15x^2$

2. $f(x) = 7x^2 + 5x + 4$

$= 14x + 5$

3. $f(x) = \sin 2x$

$= 2\cos 2x$

4. $f(x) = \ln(3x+1)$

$= \frac{1}{3x+1} \cdot 3$

5. $f(x) = e^{5x+3}$

$= 5e^{5x+3}$

6. $f(x) = \frac{4}{x^3} + \frac{2}{x^2} + x + 7$

$= 4x^{-3} + 2x^{-2} + x + 7$

$= -12x^{-4} - 4x^{-3} + 1$

7. $f(x) = \sin x + \cos x + \tan x + \sec x$

$= \cos x - \sin x + \sec^2 x + \sec x \tan x$

8. $f(x) = (3x+2)^2$

$= 2(3x+2) \cdot 3$

$= 18x + 12$

9. $f(x) = x^2 e^{2x}$

$= x^2 \cdot (e^{2x})' + (x^2)' \cdot e^{2x}$

$= 2x^2 e^{2x} + 2x \cdot e^{2x}$

$= 2xe^{2x}(x+1)$

10. $f(x) = \sin x \sec x$

$= \sin x \cdot \frac{1}{\cos x}$

$= \tan x$

$= \sec^2 x$