(72) $y = 1 - \cos 2x + 2\cos^2 x$

$y' = \sin(2x)(2) + 4\cos x(-\sin x)$

$y' = 2\sin 2x - 4\sin x\cos x$

$= 4\sin x\cos x - 4\sin x\cos x$

$= 0$

(74) $y = \csc 3x + \cot(3x)$

$y' = -\csc 3x \cot 3x\,(3) + -\csc^2(3x)(3)$

$y' = -3\csc 3x \cot 3x - 3\csc^2 3x$

$y' = -3\csc(3x)\left(\cot(3x) + \csc(3x)\right)$

(76) $y = \frac{1}{7}\sec^7 x - \frac{1}{5}\sec^5 x$

$y' = 7 \cdot \frac{1}{7}\sec^6 x \cdot \sec x\tan x - \frac{1}{5} \cdot 5\sec^4 x \cdot \sec x\tan x$

$y' = \sec^7 x\tan x - \sec^5 x\tan x$

$y' = \sec^5 x\tan x\,(\sec^2 x - 1)$

$y' = \sec^5 x\tan^3 x$

(80) $y = \dfrac{\cos(x-1)}{x-1}$

$y' = \dfrac{(x-1)(-\sin(x-1)) - \cos(x-1)}{(x-1)^2}$

$y' = -\dfrac{(x-1)(\sin(x-1)) - \cos(x-1)}{(x-1)^2}$

(89) $y = 2x^2 + \sin 2x$

$y' = 4x + 2\cos(2x)$

$y'' = 4 - 2\sin(2x) \cdot 2$

$y'' = 4 - 4\sin(2x)$

(91) $f(x) = \cot x$

$f'(x) = -\csc^2 x$

$f''(x) = -2\csc x\,(\csc x\cot x)$

$= 2\csc^2 x\cot x$