CH.2 AB HW 2-4 Chain Rule   Name _____

Find the derivative of each

1) $f(x)=(4x+1)^2$

2) $y=(x^4-2x^2+3)^4$

3) $f(x)=\cos^5 x$

4) $f(x)=(3x^2-2)^{3/4}$

5) $f(x)=\left(\dfrac{x+1}{x-1}\right)^3$

6) $f(x)=(x\cdot\sin x)^6$

7) $f(x)=\tan(7x^8)$

8) $f(x)=\sec(5x)$

9) $f(x)=(\cos(3x))^9$

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

11) $f(x)=(g(x))^{10}$

12) $f(x)=h(g(x))$

Find the equation of the tangent line and the normal line at the given point

13) $f(x) = (x+6)^{2/3}$; $x = 21$

14) $y = (3x-7)^5$; $(2,-1)$

Find the derivative of each

15) $f(x) = x^2\sqrt{4x^2+2}$

16) $f(x) = 6x^3(x^2+7)^{11}$

17) $f(x) = \dfrac{2x-3}{(x+5)^7}$

18) $f(x) = \dfrac{\sqrt{8x^2-1}}{3x+6}$