Math 2413 – Calculus I **Homework** Section 2.6 **Name**:

Find the Derivative:

1. $f(x)=\left(x^2-2\right)^2$

2. $y=\left(2\sqrt{x}-1\right)(4x+1)^{-1}$

3. $f(x)=x^2\sqrt{1-x^2}$

4. $f(t)=\sin^3 4t$

5. $y=3(4-9x)^4$

6. $y=\sqrt[3]{6x^2+1}$

7. $y=\left(\frac{1}{x-3}\right)^2$

8. $y=\frac{1}{\sqrt{x+2}}$

9. $f(x)=x^3(x-4)^5$

10. $g(t)=\sqrt{\frac{1}{t^2-2}}$

11. $h(x)=\sin 2x\cos 2x$

12. $f(x)=\left(\frac{3x^2-2}{2x+3}\right)^3$

13. $f(x)=\frac{\cot x}{\sin x}$

14. $f(\theta)=\tan^2 5\theta$

15. $f(x)=\sqrt{x}+\frac{1}{4}\sin(2x)^2$

16. $y=\sin(\tan 2x)$

17. $h(t)=2\cot^2(\pi t+2)$

18. $f(x)=(2x+5)^2\cdot\left(x^4-3\right)^3\cdot\left(x^2-5x+2\right)^6$

19. $f(x)=\frac{\left(3x^2-1\right)^4\cdot(5-8x)^3}{\left(x^3-2x+1\right)^2}$

20. $y=\sec\left(\frac{x^2+1}{x^4+2}\right)^3$