Name:_____ **Quiz 3: Ch 3.5**

Draw a box around your final answers. No partial credit will be given.

Find the 2nd derivative of:

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

2. $f(x)=2x^3-3x^2+1$

3. $\mathrm{h(t)}=t^4-2t^3+6t^2-3t+10$

4. $f(x)=\left(x^2+2\right)^5$ **[2 lines]**

5. $g(\mathrm{t})=(2t^2-1)^2(3t^2)$ **[2 lines]**

Find the 2nd derivative of:

6. $f(x)=\dfrac{x}{2x+1}$ **[2 lines]**

7. $f(x)=x^2(3x+1)^4$ **[2 lines]**

8. Find the 3rd derivative of: $f(x)=3x^4-4x^3$

9. Find the 3rd derivative of: $f(x) = 3x^5 - 6x^4 + 2x^2 - 8x + 12$

10. During the construction of an office building, a hammer is accidentally dropped from a height of $108\ ft.$ The distance (in feet) the hammer falls in t seconds is $s = 12t^2$.

    a. What is the hammer's velocity when it strikes the ground?

    b. What is its acceleration?