Math 150 - Week-In-Review 5 $_{\rm Sana\ Kazemi}$

PROBLEM STATEMENTS

1. For the function $f(x) = 2x^3 + 5$ compute and simplify the difference quotient.

2. For the function $g(x) = \sqrt{x-6}$ compute and simplify $\frac{g(a+\Delta x) - g(a)}{\Delta x}$



3. position of a particle is given by $h(t) = \frac{5t}{t+4}$ feet after t seconds. Find the average velocity on the interval $[t, t + \Delta t]$.



4. Solve for h in the following equation.

$$\left|\frac{1}{h+3} + 2\right| = \left|\frac{2}{(h-1)(h+3)}\right|$$



5. Solve for v in the following equation.

$$\frac{v+4}{v+1} - \frac{v+5}{v-1} = -1$$



6. For the following function, state the domain, identify the intercepts, analyze the end behavior and sketch the graph.

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





7. For the following function, state the domain, identify the intercepts, analyze the end behavior and sketch the graph.

$$g(x) = \frac{2x}{(1+3x)^{\frac{1}{5}}}$$





8. For the following function, state the domain, identify the intercepts, analyze the end behavior and sketch the graph.

$$h(x) = \sqrt{x+3} \left(1+3x\right)^{\frac{1}{5}}$$





9. Write P as a function of t. (i.e. solve for P.)

$$t = \frac{2+t^2}{\sqrt{3p-8}}$$