# Math 150 - Week-In-Review 5 <br> Sana Kazemi <br> <br> Problem Statements 

 <br> <br> Problem Statements}

1. For the function $f(x)=2 x^{3}+5$ 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 $h(t)=\frac{5 t}{t+4}$ 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.

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


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

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


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

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



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

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

