Math 150, *Lecture Notes- Bonds* **Name_____**

Section P.3 *Functions and Their Graphs*

Ex.1 Evaluate the function and simplify: $f(x)=\begin{cases} x^2+2, & x\le 1 \\ 2x^2+2, & x>1 \end{cases}$,

find **(a)** $f(-2)$, **(b)** $f(0)$, **(c)** $f(1)$ and **(d)** $f(s^2+1)$

(a) $f(-2)=$

(b) $f(0)=$

(c) $f(1)=$

(d) $f(s^2+1)=$

Ex.2 Evaluate the function and simplify: $f(x)=x^3-x$, find $\dfrac{f(x)-1}{x-1}$

$\dfrac{f(x)-1}{x-1}=$

Ex.3 Find the following functions:
(a) $f(x)+g(x)$, **(b)** $f(x)-g(x)$, **(c)** $f(x)\bullet g(x)$ and **(d)** $f(x)/g(x)$,
given: $f(x)=x^2+5x+4$ and $g(x)=x+1$

(a) $f(x)+g(x)=$

(b) $f(x)-g(x)=$

Ex.3

(c) $f(x) \cdot g(x) =$

(d) $f(x) / g(x) =$

Ex.4 Find the following functions: **(a)** $(f \circ g)(x)$ and **(b)** $(g \circ f)(x)$,

given: $f(x) = \dfrac{x}{x-1}$ and $g(x) = \dfrac{-4}{x}$

(a) $(f \circ g)(x) =$

(b) $(g \circ f)(x)$,

Ex.5 determine whether the following functions are even, odd, or neither:
(a) $f(x)=\sqrt[3]{x}$ and **(b)** $g(x)=\sin^2(x)$