PC 4-2 Notes

| Students will be able to perform operations on functions symbolically and numerically. | | | | | |
|---|---|---|---|---|---|
| **Symbolic** | | | | | |
| Adding functions: | $f(x)+g(x)$ | ...is the same as writing... | $f+g$ | ...which is the same as... | $(f+g)(x)$ |
| Subtracting functions: | $f(x)-g(x)$ | ...is the same as writing... | $f-g$ | ...which is the same as... | $(f-g)(x)$ |
| Multiplying functions: | $f(x)*g(x)$ | ... is the same as writing... | $fg$ | ...which is the same as... | $(fg)(x)$ |
| Dividing functions: | $f(x)/g(x)$ | ... is the same as writing... | $\frac{f}{g}$ | ... which is the same as .... | $\left(\frac{f}{g}\right).(x)$ |

$f(x) = 3x+5$ $\quad g(x) = x^2-2$

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

$f(g(x)) = 3(g(x)) + 5$

$= 3(x^2-2) + 5$

$= 3x^2 - 6 + 5$

$f(g(x)) = 3x^2 - 1$

$g(f(2)) = (f(2))^2 - 2$

$= (3(2)+5)^2 - 2$

$= (11)^2 - 2$

$= 121 - 2$

$g(f(2)) = 119$