

PC 1-8 Notes

Students will be able to perform operations on functions symbolically and numerically.

Symbolic

Adding functions:	$f(x) + g(x)$	$f + g$	$(f + g)(x)$
Subtracting functions:	$f(x) - g(x)$	$f - g$	$(f - g)(x)$
Multiplying functions:	$f(x) * g(x)$	fg	$(fg)(x)$
Dividing functions:	$f(x)/g(x)$	$\frac{f}{g}$	$(\frac{f}{g})(x)$

Numerical

Adding functions:	$f(3) + g(2)$	$f + g$	$(f + g)(-4)$
Subtracting functions:	$f(0) - g(5)$	$f - g$	$(f - g)(7)$
Multiplying functions:	$f(7) * g(8)$	fg	$(fg)(5)$
Dividing functions:	$f(2)/g(0)$	$\frac{f}{g}$	$(\frac{f}{g})(-2)$

Symbolic Example $f(x) = 3x - 8$ $g(x) = \sqrt{x} + 7$

Find: $f(x) - g(x) = 3x - 8 - (\sqrt{x} + 7)$
 $= 3x - 8 - \sqrt{x} - 7$
 $= 3x - \sqrt{x} - 15$

Numerical Example $f(x) = 3x - 8$ $g(x) = \sqrt{x} + 7$

Find $(f - g)(7) = f(7) - g(7)$
 $= 3(7) - 8 - (\sqrt{7} + 7)$
 $= 21 - 8 - \sqrt{7} - 7$
 $= 6 - \sqrt{7}$