Algebra of Functions

If you can find things like $f(3)$ and $f(-5)$ then you can do this!!

Take a look at these two functions

$f(x) = x + 2$ and $g(x) = x^2 + 2$

Let's find the following:

$f(3) = (3) + 2 = 5$

$f(3) = 5$

$g(3) = (3)^2 + 2 = 9 + 2 = 11$

$g(3) = 11$

$f(3) + g(3) = 5 + 11 = 16$

$f(3) - g(3) = 5 - 11 = -6$

$f(3) * g(3) = 5 \times 11 = 55$

$f(3) / g(3) = \frac{5}{11}$

You Try

$f(x) = x+1$ and $g(x) = \sqrt{(x+3)}$

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

$= x+1+\sqrt{(x+3)}$

$= x+1+\sqrt{x+3}$

$(f+g)(6) = f(6) + g(6) =$

$= 7 + 3$

$= 10$

$(f-g)(-4) = f(-4) - g(-4) =$

$= -3 - i$

SIDE NOTE

* $f(6) = x+1$
  $= 6+1 = -$
* $g(6) = \sqrt{x+3}$
  $= \sqrt{6+3}$
  $= \sqrt{9} =$

SIDE NOTE

$f(-4) = x+1$
$= -4+1$
$= -3$

$g(-4) = \sqrt{x+3}$
$= \sqrt{-4+3}$
$= \sqrt{-1} = i$

* Recall *

$i = \sqrt{-1}$

$i^2 = i \cdot i = \sqrt{-1}\sqrt{-1} = -1$

$i^3 = i^2 \cdot i = -\sqrt{-1} = -i$

$i^4 = i^2 \cdot i^2 = -1 \cdot -1 = 1$