

Function Notation and Operations Worksheet

Use the functions below to answer the given questions:

~~$f(x) = 3x - 4$ $g(x) = 2x^2 + 5$ $h(x) = 8 - 3x$ $p(x) = x^2 - 2x$~~

FUNCTION NOTATION:

1) $f(-3)$

$f(-3) = 3(-3) - 4$
 $-9 - 4 = \boxed{-13}$

2) $f(6)$

$3(6) - 4 = 18 - 4 =$
 $\boxed{14}$

3) $f(x+2)$

$3(x+2) - 4$
 $3x + 6 - 4$
 $\boxed{3x + 2}$

4) $g(-1)$

$2(-1)^2 + 5$
 $2 + 5 = \boxed{7}$

5) $g(4)$

$2(4)^2 + 5$
 $2(16) + 5 = 32 + 5 = \boxed{37}$

6) $p(-2)$

$(-2)^2 - 2(-2)$
 $4 + 4 = \boxed{8}$

7) $p(5)$

$5^2 - 2(5) = 25 - 10 =$
 $\boxed{15}$

8) $h(-2)$

$8 - 3(-2)$
 $8 + 6 = \boxed{14}$

9) $h(5x - 3)$

$h(5x-3) = 8 - 3(5x-3)$
 $8 - 15x + 9$
 $\boxed{17 - 15x}$ (or $+15x + 17$)

FUNCTION OPERATIONS:

10) $(h + g)(3)$

$h(3) + g(3)$
 $8 - 3(3) + 2(3)^2 + 5$
 $8 - 9 + 18 + 5$
 $-1 + 18 + 5 = 17 + 5 = \boxed{22}$

12) $(f \cdot g)(2)$

$(3(2) - 4)(2(2)^2 + 5)$
 $(6 - 4)(8 + 5) = 2(13) = \boxed{26}$

14) $(p + g)(x)$

$x^2 - 2x + 2x^2 + 5$
 $\boxed{3x^2 - 2x + 5}$

16) $f(h(x))$

11) $(f - p)(-1)$

$3(-1) - 4 - ((-1)^2 - 2(-1))$
 $-3 - 4 - (1 + 2)$
 $-7 - 3 = \boxed{-10}$

13) $(h \cdot p)(5)$

$h(5) \cdot p(5)$
 $(8 - 3(5)) \cdot ((5)^2 - 2(5))$
 $(-7)(15) = \boxed{-105}$

15) $(f - h)(x)$

$3x - 4 - (8 - 3x)$
 $3x - 4 - 8 + 3x$
 $\boxed{6x - 12}$

17) $g(p(x))$

Challenge: $f(g(p(h(p(g(f(g(0))))))))$

$\frac{247}{494}$

32955682369

$f(5)$
 $g(11)$

$h(60515)$

$p(-181537)$

$f(2172201862482162132503)$

$g(6516605587446486397505)$