Algebra 2 Name_____

Operations with Functions (including domain)

Perform the indicated operation. State the domain of each given function and the new function created by the operation.

1) $g(n) = 2n^2 + 5$
$f(n) = 4n + 1$
Find $g(n) - f(n)$

2) $g(n) = -3n + 2$
$f(n) = n^2 + 3n$
Find $(g \cdot f)(n)$

3) $g(n) = -4n - 1$
$h(n) = 2n^2 - 2n$
Find $g(n) \cdot h(n)$

4) $f(n) = 3n - 2$
$g(n) = n^3 + 2$
Find $(f - g)(n)$

5) $f(a) = 2a - 3$
$g(a) = a + 1$
Find $\left(\frac{f}{g}\right)(a)$

6) $g(x) = x^2 - 2$
$f(x) = \sqrt{3x - 4}$
Find $(g \cdot f)(x)$

7) $f(x) = x - 4$
$g(x) = 2x^2 - 1$
Find $(f + g)(x)$

8) $g(x) = -3x^2 - 3$
$h(x) = 3x + 4$
Find $g(x) \cdot h(x)$

9) $g(x) = 4x + 1$
$f(x) = x^2 + 4x$
Find $(g - f)(x)$

10) $h(n) = n + 3$
$g(n) = n^3 + 1$
Find $h(n) \div g(n)$

11) $h(n) = 4n + 5$
$g(n) = n^2 - 3n$
Find $(h - g)(n)$

12) $g(x) = x^2 + 2x$
$h(x) = 4x - 2$
Find $g(x) \div h(x)$

13) $f(n) = n - 2$
$g(n) = 2n + 2$
Find $f(n) \cdot g(n)$

14) $g(t) = 2t^3 + 2$
$h(t) = \sqrt{t + 2}$
Find $\frac{g(t)}{h(t)}$

15) $h(t) = -2t^3 - 2$
$g(t) = 4t + 5$
Find $(h - g)(t)$

16) $f(x) = x^2 + x$
$g(x) = x + 3$
Find $f(g(-5))$

17) $h(t) = 4t - 1$
$g(t) = t^3 - 5t$
Find $h(g(2))$

18) $f(x) = x^3 - 4x$
$g(x) = x - 2$
Find $(f \circ g)(-4)$

19) $g(t) = t^2 - t$
$f(t) = \sqrt{t - 5}$
Find $(g \circ f)(6)$

20) $h(x) = 4x - 5$
$g(x) = 2x + 4$
Find $(h \circ g)(-8)$