Math 2   Name_____
Unit 9.5 Multiply and Divide Operations with Functions PRACTICE   Period____

Perform the indicated operation.

1) $g(a) = a^2 - 5a$
$h(a) = 4a + 1$
Find $g(a) \cdot h(a)$

$4a^3 - 19a^2 - 5a$

2) $g(t) = t^2 - 3$
$f(t) = 3t - 5$
Find $(g \cdot f)(t)$

$3t^3 - 5t^2 - 9t + 15$

3) $f(n) = n^3 - 4n$
$g(n) = 3n - 5$
Find $(f \cdot g)(n)$

$3n^4 - 5n^3 - 12n^2 + 20n$

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

$x^4 - 4x^3 + x^2 - 4x$

5) $g(x) = x^2 - 3x$
$h(x) = x - 4$
Find $g(x) \div h(x)$

$\dfrac{x^2 - 3x}{x - 4}$

6) $f(x) = x^2 - 2$
$g(x) = -x + 1$
Find $f(x) \cdot g(x)$

$-x^3 + x^2 + 2x - 2$

7) $g(x) = x^2 + 3$
$f(x) = -3x - 5$
Find $g(x) \div f(x)$

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

8) $h(x) = 3x$
$g(x) = 4x + 1$
Find $(h \cdot g)(x)$

$12x^2 + 3x$

9) $f(x) = x - 4$
$g(x) = x + 5$
Find $f(0) \cdot g(0)$

-20

10) $g(x) = 2x + 1$
$h(x) = x + 3$
Find $(g \cdot h)(4)$

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11) $f(x) = -3x + 1$
$g(x) = 3x^2 + 4x$
Find $(f \cdot g)(-1)$

-4

12) $f(n) = 4n - 5$
$g(n) = -3n^3 + 2$
Find $f(0) \div g(0)$

$-\dfrac{5}{2}$

13) $f(x) = -4x + 3$
$g(x) = x^3 - 4x$
Find $f(5) \div g(5)$

$$-\frac{17}{105}$$

14) $f(n) = 3n - 5$
$g(n) = -n$
Find $(f \cdot g)(3)$

$$-12$$

15) $f(n) = n^3 - 2$
$g(n) = n + 5$
Find $f(-3) \div g(-3)$

$$-\frac{29}{2}$$

16) $g(n) = 4n + 3$
$h(n) = n^2 - 3 - n$
Find $\left(\dfrac{g}{h}\right)(1)$

$$-\frac{7}{3}$$

17) $f(x) = x^2 - 3$
$g(x) = -2x - 1$
Find $\left(\dfrac{f}{g}\right)(4x)$

$$\frac{16x^2 - 3}{-8x - 1}$$

18) $g(n) = n - 2$
$h(n) = n^2 - 2$
Find $g(4x) \div h(4x)$

$$\frac{2x - 1}{8x^2 - 1}$$

19) $g(n) = 4n - 2$
$h(n) = 3n - 4$
Find $\left(\dfrac{g}{h}\right)\left(\dfrac{n}{4}\right)$

$$\frac{4n - 8}{-16 + 3n}$$

20) $g(n) = 3n + 1$
$f(n) = 4n + 3$
Find $(g \cdot f)(n - 3)$

$$12n^2 - 59n + 72$$

21) $g(x) = 4x - 5$
$h(x) = -3x^2 + 5x$
Find $(g \cdot h)(x^2)$

$$-12x^6 + 35x^4 - 25x^2$$

22) $f(x) = 4x$
$g(x) = 3x + 1$
Find $f\left(\dfrac{x}{2}\right) \div g\left(\dfrac{x}{2}\right)$

$$\frac{4x}{2 + 3x}$$

23) $f(t) = 3t - 4$
$g(t) = 2t - 1$
Find $f\left(\dfrac{t}{3}\right) \cdot g\left(\dfrac{t}{3}\right)$

$$\frac{2}{3}t^2 - \frac{11}{3}t + 4$$

24) $g(x) = 4x + 5$
$h(x) = x^3 + 5x$
Find $\left(\dfrac{g}{h}\right)(2x)$

$$\frac{8x + 5}{8x^3 + 10x}$$