Math 2   Name_____
Unit 9.5 Multiply and Divide Operations with Functions EXAMPLE

Perform the indicated operation.

1) $g(x) = x - 5$
$f(x) = x^3 + 1$
Find $g(x) \cdot f(x)$

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

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

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

5) $g(n) = -2n + 4$
$h(n) = 2n^3 - 1$
Find $g(n) \div h(n)$

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

7) $g(n) = -n$
$h(n) = n^3 - n^2$
Find $g(n) \div h(n)$

8) $g(x) = 3x + 1$
$f(x) = -x - 1$
Find $g(x) \div f(x)$

9) $f(x) = 3x - 5$
$g(x) = x^2 + 2x$
Find $f(-9) \div g(-9)$

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

11) $g(n) = n^2 - 5$
$h(n) = n - 1$
Find $g(-5) \cdot h(-5)$

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

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

14) $g(x) = -x - 5$
    $h(x) = x^2 - 4x$
    Find $g(-7) \cdot h(-7)$

15) $g(x) = x + 5$
    $h(x) = 2x + 3$
    Find $g(5) \cdot h(5)$

16) $f(n) = 4n - 4$
    $g(n) = n^2 - 5 + 2n$
    Find $\left(\dfrac{f}{g}\right)(4)$

17) $g(x) = 3x - 3$
    $h(x) = 4x - 3$
    Find $\left(\dfrac{g}{h}\right)(3x)$

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

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

20) $g(x) = x^2 - 5x$
    $h(x) = -2x - 4$
    Find $g(x - 1) \cdot h(x - 1)$

21) $f(x) = -3x + 2$
    $g(x) = x + 4$
    Find $\left(\dfrac{f}{g}\right)(-x)$

22) $f(a) = a - 5$
    $g(a) = a^3 + 2a^2$
    Find $(f \cdot g)(a - 1)$

23) $g(t) = t - 5$
    $h(t) = t^2 + 5t$
    Find $(g \cdot h)\left(\dfrac{t}{2}\right)$

24) $f(t) = -t$
    $g(t) = t + 5$
    Find $f(-2t) \cdot g(-2t)$

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Unit 9.5 Multiply and Divide Operations with Functions EXAMPLE

Perform the indicated operation.

1) $g(x) = x - 5$
   $f(x) = x^3 + 1$
   Find $g(x) \cdot f(x)$

   $x^4 - 5x^3 + x - 5$

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

   $2x^4 + 4x^3 - 6x - 12$

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

   $x^4 - 2x^3 - 4x^2 + 8x$

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

   $2n^2 - 2n - 4$

5) $g(n) = -2n + 4$
   $h(n) = 2n^3 - 1$
   Find $g(n) \div h(n)$

   $\dfrac{-2n + 4}{2n^3 - 1}$

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

   $6x^3 - 10x^2 + 9x - 15$

7) $g(n) = -n$
   $h(n) = n^3 - n^2$
   Find $g(n) \div h(n)$

   $-\dfrac{1}{n^2 - n}$

8) $g(x) = 3x + 1$
   $f(x) = -x - 1$
   Find $g(x) \div f(x)$

   $\dfrac{3x + 1}{-x - 1}$

9) $f(x) = 3x - 5$
   $g(x) = x^2 + 2x$
   Find $f(-9) \div g(-9)$

   $-\dfrac{32}{63}$

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

    -10

11) $g(n) = n^2 - 5$
    $h(n) = n - 1$
    Find $g(-5) \cdot h(-5)$

    -120

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

    -77

-1-

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

60

14) $g(x) = -x - 5$
$h(x) = x^2 - 4x$
Find $g(-7) \cdot h(-7)$

154

15) $g(x) = x + 5$
$h(x) = 2x + 3$
Find $g(5) \cdot h(5)$

130

16) $f(n) = 4n - 4$
$g(n) = n^2 - 5 + 2n$
Find $\left(\dfrac{f}{g}\right)(4)$

$\dfrac{12}{19}$

17) $g(x) = 3x - 3$
$h(x) = 4x - 3$
Find $\left(\dfrac{g}{h}\right)(3x)$

$\dfrac{3x - 1}{4x - 1}$

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

$24n^3 + 16n^2 - 8n$

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

$-48x^4 + 32x^3 + 48x^2 - 32x$

20) $g(x) = x^2 - 5x$
$h(x) = -2x - 4$
Find $g(x - 1) \cdot h(x - 1)$

$-2x^3 + 12x^2 + 2x - 12$

21) $f(x) = -3x + 2$
$g(x) = x + 4$
Find $\left(\dfrac{f}{g}\right)(-x)$

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

22) $f(a) = a - 5$
$g(a) = a^3 + 2a^2$
Find $(f \cdot g)(a - 1)$

$a^4 - 7a^3 + 5a^2 + 7a - 6$

23) $g(t) = t - 5$
$h(t) = t^2 + 5t$
Find $(g \cdot h)\left(\dfrac{t}{2}\right)$

$\dfrac{-100t + t^3}{8}$

24) $f(t) = -t$
$g(t) = t + 5$
Find $f(-2t) \cdot g(-2t)$

$-4t^2 + 10t$