

Unit 6.7 Functions Operations

Period _____

Perform the indicated operation.

$$1) \begin{aligned} g(n) &= 4n - 3 \\ h(n) &= 4n + 3 \\ \text{Find } (g - h)(8) \end{aligned}$$

-6

$$2) \begin{aligned} f(n) &= 3n - 3 \\ g(n) &= 4n - 3 \\ \text{Find } f(2) + g(2) \end{aligned}$$

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$$3) \begin{aligned} h(x) &= -3x + 3 \\ g(x) &= -x - 5 \\ \text{Find } h(-9) - g(-9) \end{aligned}$$

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$$4) \begin{aligned} g(x) &= 3x - 1 \\ h(x) &= 3x - 3 \\ \text{Find } g(-6) + h(-6) \end{aligned}$$

-40

$$5) \begin{aligned} g(t) &= t - 5 \\ h(t) &= 3t - 5 \\ \text{Find } (g \cdot h)(3) \end{aligned}$$

-8

$$6) \begin{aligned} g(a) &= 3a - 3 \\ h(a) &= 2a + 5 \\ \text{Find } \left(\frac{g}{h}\right)(5) \end{aligned}$$

 $\frac{4}{5}$

$$7) \begin{aligned} g(t) &= 2t - 3 \\ f(t) &= -2t^2 - 4t \\ \text{Find } g(-4) \cdot f(-4) \end{aligned}$$

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$$8) \begin{aligned} g(n) &= n + 1 \\ f(n) &= -n + 2 \\ \text{Find } g(0) \div f(0) \end{aligned}$$

 $\frac{1}{2}$

$$9) \begin{aligned} h(n) &= n^3 + n \\ g(n) &= -4n - 3 \\ \text{Find } h(n) + g(n) \end{aligned}$$

 $n^3 - 3n - 3$

$$10) \begin{aligned} f(t) &= -2t^2 + 5 \\ g(t) &= 3t - 4 \\ \text{Find } (f \cdot g)(t) \end{aligned}$$

 $-6t^3 + 8t^2 + 15t - 20$

$$11) \begin{aligned} h(x) &= x + 3 \\ g(x) &= 3x - 3 \\ \text{Find } \left(\frac{h}{g}\right)(x) \end{aligned}$$

 $\frac{x + 3}{3x - 3}$

$$12) \begin{aligned} g(a) &= -a^2 - 2 \\ f(a) &= -a + 1 \\ \text{Find } (g \cdot f)(a) \end{aligned}$$

 $a^3 - a^2 + 2a - 2$

$$13) \begin{aligned} h(x) &= 2x - 3 \\ g(x) &= x - 2 \\ \text{Find } (h - g)(x) \end{aligned}$$

 $x - 1$

$$14) \begin{aligned} f(x) &= 2x - 2 \\ g(x) &= 4x - 3 \\ \text{Find } f(x) \div g(x) \end{aligned}$$

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

$$15) \begin{aligned} f(a) &= -3a - 5 \\ g(a) &= a^2 - 4a \\ \text{Find } \left(\frac{f}{g}\right)(a) \\ &= \frac{-3a - 5}{a^2 - 4a} \end{aligned}$$

$$16) \begin{aligned} f(x) &= x^2 + 4 \\ g(x) &= 4x + 4 \\ \text{Find } f(x) \div g(x) \\ &= \frac{x^2 + 4}{4x + 4} \end{aligned}$$

$$17) \begin{aligned} f(x) &= 4x - 4 \\ g(x) &= x^2 - 5x \\ \text{Find } (f + g)(x) \\ &= x^2 - x - 4 \end{aligned}$$

$$18) \begin{aligned} g(n) &= n^3 - 1 \\ f(n) &= 3n - 3 \\ \text{Find } g(n) - f(n) \\ &= n^3 - 3n + 2 \end{aligned}$$

$$19) \begin{aligned} f(n) &= 4n + 4 \\ g(n) &= 4n - 1 \\ \text{Find } \left(\frac{f}{g}\right)(n - 3) \\ &= \frac{4n - 8}{4n - 13} \end{aligned}$$

$$20) \begin{aligned} g(a) &= -3a + 4 \\ h(a) &= 4a - 1 \\ \text{Find } g(a^2) \div h(a^2) \\ &= \frac{-3a^2 + 4}{4a^2 - 1} \end{aligned}$$

$$21) \begin{aligned} h(x) &= x - 5 \\ g(x) &= x^3 + 4x \\ \text{Find } (h + g)\left(\frac{x}{3}\right) \\ &= \frac{1}{27}x^3 + \frac{5}{3}x - 5 \end{aligned}$$

$$22) \begin{aligned} h(x) &= x - 2 \\ g(x) &= 2x - 1 \\ \text{Find } h(x^2) \cdot g(x^2) \\ &= 2x^4 - 5x^2 + 2 \end{aligned}$$

$$23) \begin{aligned} g(a) &= -2a - 2 \\ h(a) &= 2a + 1 \\ \text{Find } (g \cdot h)(3a) \\ &= -36a^2 - 18a - 2 \end{aligned}$$

$$24) \begin{aligned} g(t) &= -2t^2 + 4t \\ h(t) &= -2t \\ \text{Find } g(2n) + h(2n) \\ &= -8n^2 + 4n \end{aligned}$$

$$25) \begin{aligned} f(n) &= n - 3 \\ g(n) &= 3n + 5 \\ \text{Find } f(n^2) - g(n^2) \\ &= -2n^2 - 8 \end{aligned}$$

$$26) \begin{aligned} f(n) &= 4n + 5 \\ g(n) &= 4n + 4 \\ \text{Find } f(4n) \div g(4n) \\ &= \frac{16n + 5}{16n + 4} \end{aligned}$$

$$27) \begin{aligned} h(x) &= 2x^2 + 4x \\ g(x) &= 3x + 4 \\ \text{Find } h\left(\frac{x}{3}\right) + g\left(\frac{x}{3}\right) \\ &= \frac{2}{9}x^2 + \frac{7}{3}x + 4 \end{aligned}$$

$$28) \begin{aligned} g(n) &= -n^3 + 5 \\ h(n) &= 2n - 1 \\ \text{Find } (g - h)(4n) \\ &= -64n^3 - 8n + 6 \end{aligned}$$