

Unit 3 Homework: Function Operations

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Name _____

Perform the indicated operation. Please complete all work on a blank sheet of paper. Be sure to state restrictions where necessary. Check your work with the back of this page, and be prepared to ask any questions you have. :)

1) $g(x) = -x^3 - 4x^2$

$h(x) = x - 3$

Find $(g - h)(x)$

2) $h(n) = n^3 + n$

$g(n) = 3n - 3$

Find $\left(\frac{h}{g}\right)(n)$

3) $g(x) = 3x$

$h(x) = x^2 + 5$

Find $(g + h)(x)$

4) $g(x) = -4x - 4$

$h(x) = -4x^3 - 12x^2$

Find $\frac{g(x)}{h(x)}$

5) $f(x) = 4x$

$g(x) = x + 3$

Find $f(x) + g(x)$

6) $g(n) = 2n + 1$

$f(n) = 3n + 3$

Find $\left(\frac{g}{f}\right)(n)$

7) $f(n) = |2n + 5|$

$g(n) = 2n + 4$

Find $(f - g)(-8)$

8) $g(a) = 2a - 5$

$f(a) = 2a^2 - 3 + 2a$

Find $\frac{g(-4)}{f(-4)}$

9) $f(t) = t - 5$

$g(t) = 4t + 2$

Find $(f + g)(-6)$

10) $g(n) = n - 5$

$h(n) = n + 5$

Find $g(5) \cdot h(5)$

11) $g(x) = 3x + 4$

$h(x) = -2x^2 - 3$

Find $(g + h)(0)$

12) $g(n) = -3n - 4$

$h(n) = n^3 - 4n$

Find $\left(\frac{g}{h}\right)(7)$

13) $f(n) = 3n + 4$

$g(n) = n^2 + 4n$

Find $(f - g)(-8)$

14) $f(t) = -t - 5$

$g(t) = t^2 + 2$

Find $(f + g)(6)$

15) $h(n) = 2n$

$g(n) = n^2 + 4$

Find $(h + g)(-10)$

16) $g(t) = t^2 - 4t$

$h(t) = t - 5$

Find $(g \circ h)(-7)$

17) $f(n) = 3n + 4$

$g(n) = n^2 + 2n$

Find $(2f - 5g)(n)$

18) $g(x) = -3x + 2$

$h(x) = 3x + 2$

Find $(3g + 4h)(x)$

19) $f(x) = 2x - 4$

$g(x) = x^3 - 4$

Find $x f(x) - 2g(x)$

20) $f(x) = -3x - 1$

$g(x) = x + 1$

Find $(5f - 3g)(x)$

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1)
$$\begin{aligned} g(x) &= -x^3 - 4x^2 \\ h(x) &= x - 3 \end{aligned}$$

Find $(g - h)(x)$

2)
$$\begin{aligned} h(n) &= n^3 + n \\ g(n) &= 3n - 3 \end{aligned}$$

Find $\left(\frac{h}{g}\right)(n)$

3)
$$\begin{aligned} g(x) &= 3x \\ h(x) &= x^2 + 5 \end{aligned}$$

Find $(g + h)(x)$

4)
$$\begin{aligned} g(x) &= -4x - 4 \\ h(x) &= -4x^3 - 12x^2 \end{aligned}$$

Find $\frac{g(x)}{h(x)}$

5)
$$\begin{aligned} f(x) &= 4x \\ g(x) &= x + 3 \end{aligned}$$

Find $f(x) + g(x)$

6)
$$\begin{aligned} g(n) &= 2n + 1 \\ f(n) &= 3n + 3 \end{aligned}$$

Find $\left(\frac{g}{f}\right)(n)$

7)
$$\begin{aligned} f(n) &= |2n + 5| \\ g(n) &= 2n + 4 \end{aligned}$$

Find $(f - g)(-8)$

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

Find $\frac{g(-4)}{f(-4)}$

9)
$$\begin{aligned} f(t) &= t - 5 \\ g(t) &= 4t + 2 \end{aligned}$$

Find $(f + g)(-6)$

10)
$$\begin{aligned} g(n) &= n - 5 \\ h(n) &= n + 5 \end{aligned}$$

Find $g(5) \cdot h(5)$

11)
$$\begin{aligned} g(x) &= 3x + 4 \\ h(x) &= -2x^2 - 3 \end{aligned}$$

Find $(g + h)(0)$

12)
$$\begin{aligned} g(n) &= -3n - 4 \\ h(n) &= n^3 - 4n \end{aligned}$$

Find $\left(\frac{g}{h}\right)(7)$

13)
$$\begin{aligned} f(n) &= 3n + 4 \\ g(n) &= n^2 + 4n \end{aligned}$$

Find $(f - g)(-8)$

14)
$$\begin{aligned} f(t) &= -t - 5 \\ g(t) &= t^2 + 2 \end{aligned}$$

Find $(f + g)(6)$

15)
$$\begin{aligned} h(n) &= 2n \\ g(n) &= n^2 + 4 \end{aligned}$$

Find $(h + g)(-10)$

16)
$$\begin{aligned} g(t) &= t^2 - 4t \\ h(t) &= t - 5 \end{aligned}$$

Find $(g \circ h)(-7)$
 $(g \circ h)(-7) = 192$

17)
$$\begin{aligned} f(n) &= 3n + 4 \\ g(n) &= n^2 + 2n \end{aligned}$$

Find $(2f - 5g)(n)$

18)
$$\begin{aligned} g(x) &= -3x + 2 \\ h(x) &= 3x + 2 \end{aligned}$$

Find $(3g + 4h)(x)$

19)
$$\begin{aligned} f(x) &= 2x - 4 \\ g(x) &= x^3 - 4 \end{aligned}$$

Find $xf(x) - 2g(x)$

20)
$$\begin{aligned} f(x) &= -3x - 1 \\ g(x) &= x + 1 \end{aligned}$$

Find $(5f - 3g)(x)$
 $(5f - 3g)(x) = -18x - 8$