Unit 3 Homework: Function Operations 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 $xf(x) - 2g(x)$

20) $f(x) = -3x - 1$
$g(x) = x + 1$
Find $(5f - 3g)(x)$

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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 $(g - h)(x)$
$(g - h)(x) = -x^3 - 4x^2 - x + 3$

2) $h(n) = n^3 + n$
$g(n) = 3n - 3$
Find $\left(\frac{h}{g}\right)(n)$
$\left(\frac{h}{g}\right)(n) = \frac{n^3 + n}{3n - 3}$

3) $g(x) = 3x$
$h(x) = x^2 + 5$
Find $(g + h)(x)$
$(g + h)(x) = x^2 + 3x + 5$

4) $g(x) = -4x - 4$
$h(x) = -4x^3 - 12x^2$
Find $\frac{g(x)}{h(x)}$
$\frac{g(x)}{h(x)} = \frac{x + 1}{x^3 + 3x^2}$

5) $f(x) = 4x$
$g(x) = x + 3$
Find $f(x) + g(x)$
$(f + g)(x) = 5x + 3$

6) $g(n) = 2n + 1$
$f(n) = 3n + 3$
Find $\left(\frac{g}{f}\right)(n)$
$\left(\frac{g}{f}\right)(n) = \frac{2n + 1}{3n + 3}$

7) $f(n) = |2n + 5|$
$g(n) = 2n + 4$
Find $(f - g)(-8)$
$(f - g)(-8) = 23$

8) $g(a) = 2a - 5$
$f(a) = 2a^2 - 3 + 2a$
Find $\frac{g(-4)}{f(-4)}$
$\frac{g(-4)}{f(-4)} = -\frac{13}{21}$

9) $f(t) = t - 5$
$g(t) = 4t + 2$
Find $(f + g)(-6)$
$(f + g)(-6) = -33$

10) $g(n) = n - 5$
$h(n) = n + 5$
Find $g(5) \cdot h(5)$
$g(5) \cdot h(5) = 0$

11) $g(x) = 3x + 4$
$h(x) = -2x^2 - 3$
Find $(g + h)(0)$
$(g + h)(0) = 1$

12) $g(n) = -3n - 4$
$h(n) = n^3 - 4n$
Find $\left(\frac{g}{h}\right)(7)$
$\left(\frac{g}{h}\right)(7) = -\frac{5}{63}$

13) $f(n) = 3n + 4$
$g(n) = n^2 + 4n$
Find $(f - g)(-8)$
$(f - g)(-8) = -52$

14) $f(t) = -t - 5$
$g(t) = t^2 + 2$
Find $(f + g)(6)$
$(f + g)(6) = 27$

15) $h(n) = 2n$
$g(n) = n^2 + 4$
Find $(h + g)(-10)$
$(h + g)(-10) = 84$

16) $g(t) = t^2 - 4t$
$h(t) = t - 5$
Find $(g \circ h)(-7)$
$(g \circ h)(-7) = 192$

17) $f(n) = 3n + 4$
$g(n) = n^2 + 2n$
Find $(2f - 5g)(n)$
$(2f - 5g)(n) = -5n^2 - 4n + 8$

18) $g(x) = -3x + 2$
$h(x) = 3x + 2$
Find $(3g + 4h)(x)$
$(3g + 4h)(x) = 3x + 14$

19) $f(x) = 2x - 4$
$g(x) = x^3 - 4$
Find $xf(x) - 2g(x)$
$xf(x) - 2g(x) = -2x^3 + 2x^2 - 4x + 8$

20) $f(x) = -3x - 1$
$g(x) = x + 1$
Find $(5f - 3g)(x)$
$(5f - 3g)(x) = -18x - 8$