SATPREP Name_____

Assignment: Composite function

Date_____

Perform the indicated operation.

1) $g(n) = -3n + 5$
$f(n) = -n - 1$
Find $(g \circ f)(n)$

2) $g(n) = 2n - 4$
$f(n) = n^3 - 3$
Find $g(f(n))$

3) $g(x) = -x + 4$
Find $(g \circ g)(x)$

4) $f(t) = 3t - 3$
$g(t) = -t^2 - t$
Find $(f \circ g)(t)$

5) $f(n) = n^2 - 2n$
Find $(f \circ f)(1)$

6) $h(n) = 3n$
$g(n) = 4n + 4$
Find $h(g(0))$

7) $g(t) = t^2 + 2t$
$h(t) = 2t$
Find $(g \circ h)(0)$

8) $f(n) = -4n - 5$
Find $f(f(-5))$

Find f and g so that $h(x) = (f \circ g)(x)$. Neither function may be the identity function $f(x) = x$.

9) $h(x) = \left(\frac{x}{3} + 1\right)^3$

10) $h(x) = 5^{3x+4}$

11) $h(x) = 3x^2 + 5$

12) $h(x) = \dfrac{1}{x^3} + 1$

Perform the indicated operation.

13) $g(x) = x + 4$
$h(x) = 2x - 3$
Find $(g \circ h)(-2 + x)$

14) $f(x) = x^2 - 5$
$g(x) = 3x - 4$
Find $f\left(g\left(\dfrac{x}{3}\right)\right)$

15) $f(n) = 2n + 4$
$g(n) = -n - 3$
Find $f(g(3n))$

16) $f(n) = 2n - 3$
$g(n) = n + 1$
Find $(f \circ g)\left(\dfrac{n}{3}\right)$

Find the inverse of each function.

17) $f(n) = \dfrac{3}{n} + 1$

18) $f(x) = \sqrt[5]{\dfrac{-x - 3}{2}}$

19) $f(x) = \dfrac{-4 + 3x}{2}$

20) $h(n) = \dfrac{10 - 7n}{5}$

Answers to Assignment: Composite function

1) $3n + 8$

2) $2n^3 - 10$

3) x

4) $-3t^2 - 3t - 3$

5) 3

6) 12

7) 0

8) -65

9) $f(x) = x^3$
$g(x) = \frac{x}{3} + 1$

10) $f(x) = 5^x$
$g(x) = 3x + 4$

11) $f(x) = 3x + 5$
$g(x) = x^2$

12) $f(x) = \frac{1}{x} + 1$
$g(x) = x^3$

13) $2x - 3$

14) $x^2 - 8x + 11$

15) $-6n - 2$

16) $\frac{-3 + 2n}{3}$

17) $f^{-1}(n) = \frac{3}{n - 1}$

18) $f^{-1}(x) = -2x^5 - 3$

19) $f^{-1}(x) = \frac{2x + 4}{3}$

20) $h^{-1}(n) = \frac{-5n + 10}{7}$