

## Capter 3 Study Guide

Date \_\_\_\_\_ Period \_\_\_\_\_

**Evaluate each function.**

1)  $g(x) = x - 2$ ; Find  $g(-6)$

2)  $w(n) = \frac{1}{4}n + \frac{3}{5}$ ; Find  $w\left(\frac{1}{4}\right)$

**Perform the indicated operation.**

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

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

5)  $h(n) = 2n + 5$   
 $g(n) = 4n - 4$   
Find  $h(n) \cdot g(n)$

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

7)  $g(a) = a^2 - a$   
 $h(a) = 2a + 1$   
Find  $g(h(a))$

8)  $f(n) = n + 5$   
 $g(n) = n^2 + 3n$   
Find  $f(g(-10))$

9)  $f(n) = 3n + 1$   
 $g(n) = n^3 + 2$   
Find  $f(g(-2))$

**Find the inverse of each function.**

10)  $f(n) = -5 + \frac{4}{5}n$

11)  $f(x) = \sqrt[3]{x} + 2$

12)  $f(n) = \frac{2}{n-2} - 2$

13)  $g(x) = \frac{2}{-x-3} - 1$

**Solve each equation.**

14)  $-4 - 4a^{\frac{1}{3}} = -24$

15)  $(81x)^{\frac{1}{2}} = 9$

$$16) -9 + 5(r + 26)^{\frac{2}{3}} = 116$$

**Write each expression in exponential form.**

$$17) (\sqrt[3]{3x})^2$$

$$18) \frac{1}{\sqrt[6]{10r^3}}$$

**Simplify.**

$$19) (64a^4)^{\frac{3}{2}}$$

$$20) (k^6)^{\frac{1}{2}}$$

## Answers to Capter 3 Study Guide (ID: 1)

1)  $-8$

2)  $\frac{53}{80}$

3)  $x^2 - 4$

4)  $x^3 - 6x - 3$

5)  $8n^2 + 12n - 20$

6)  $\frac{2x - 5}{x^2 - 3x}$

7)  $4a^2 + 2a$

8)  $75$

9)  $-17$

10)  $f^{-1}(n) = \frac{5}{4}n + \frac{25}{4}$

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

12)  $f^{-1}(n) = \frac{2}{n + 2} + 2$

13)  $g^{-1}(x) = -\frac{2}{x + 1} - 3$

14)  $\{125\}$

15)  $\{1\}$

16)  $\{99, -151\}$

17)  $(3x)^{\frac{2}{3}}$

18)  $(10r^3)^{-\frac{1}{6}}$

19)  $512a^6$

20)  $k^3$