

CHAPTER 7

1. Which of the following are real numbers?

(a) $-\sqrt{7}$

(b) $\sqrt{-7}$

(a) $-\sqrt[5]{7}$

(a) $\sqrt[5]{-7}$

2. Simplify

(a)

$$\sqrt{108}$$

(b)

$$\sqrt[3]{\frac{5}{16}}$$

(c)

$$\frac{\sqrt{y}}{\sqrt{x^3}}$$

(d)

$$\frac{a^2 \cdot b^{3/2}}{a^{-1/2} \cdot b^3}$$

3. Add or subtract as indicated.

$$7\sqrt{5} - 3\sqrt{20} + 5\sqrt{2}$$

4. Multiply.

(a)

$$5\sqrt{x}(\sqrt{2} - \sqrt{3})$$

(b)

$$(2\sqrt{5} - 3\sqrt{x})(4\sqrt{5} + \sqrt{x})$$

5. Rationalize the denominator. Assume $x > 0$.

(a)

$$\frac{-2}{\sqrt[3]{x}}$$

(b)

$$\frac{\sqrt{x} + 2}{3 - \sqrt{x}}$$

CHAPTER 8

1. Solve the equation.

(a) $x^2 - 6x + 9 = 25$

(b) $2x^2 + 12x - 36 = 0$

- (c) $3x^2 - 4x + 1 = 0$
(d) $x^2 + 2x + 2 = 0$

CHAPTER 10

1. Let the functions f, g, h be given by

$$f(x) = x - 4, g(x) = \sqrt{x + 2}, h(x) = \frac{1}{x}.$$

Find

- (a) $\left(\frac{f}{g}\right)(x)$
(b) $(h \cdot f)(x)$
(c) $(h \circ f)(x)$
(d) $(f \circ h)(x)$
(e) $(g + h)(2)$
(f) the domain of $\left(\frac{g}{f}\right)(x)$

2. Find the inverse of the functions.

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

3. Graph $a(x) = 3^{x+1}$ and $b(x) = \log_5 x$

4. Find x .

- (a) $\log_2 32 = x$
(b) $\log_x \frac{1}{25} = 2$
(c) $\log x = -3$

5. Expand

- (a) $-\log_3 \left(\frac{3}{9x}\right)$
(b) $\log \left(\frac{1}{10^5}\right)$

6. Write $\frac{1}{2} \log_b x + 3 \log_b y$ as a single logarithm.

7. Suppose the population of New York can be modeled by the function $P(t) = 8008(1.02)^t$ where P is in thousands and t measures the number of years past the year 2000.

- (a) What does $P(0)$ represent?
(b) Use this model to predict the population in the year 2010.
(c) In what year does this model predict the population to reach 12 million (12,000 thousand)?

I HOPE THIS HELPS! GOOD LUCK ON YOUR EXAM!
email me if you have any questions: abulawa@math.sunysb.edu