Practice Ch10 Rev

Name(s)_____

Raise to the power or find the root. Assume that all variables represent positive numbers. Write with only positive exponents.

1) $-\sqrt[4]{x^8}$

2) $\left(\frac{1}{9}\right)^{1/2}$

3) $\left(\frac{1}{16}\right)^{-1/4}$

4) $\left(\frac{64x^3}{216}\right)^{4/3}$

5) $\sqrt[3]{-27a^9b^3}$

6) $\left(\frac{4^3x^{1/4}y^5}{x^{1/4}}\right)^{1/3}$

7) $4x^{-1/5}(3x^5 - x^{1/5})$

Find the root. Use absolute value bars when necessary.

8) $\sqrt[4]{(5xz)^4}$

9) $\sqrt[7]{(-7)^7}$

Rationalize the denominator. Assume that all variables represent positive numbers.

10) $\sqrt{\frac{4}{x}}$

11) $\frac{\sqrt{x} - 4}{\sqrt{x} + 4}$

12) $\frac{\sqrt[3]{5x}}{\sqrt[3]{6y}}$

Perform the indicated operations. Assume that all variables represent positive numbers.

13) $\sqrt{12x^3} - 8\sqrt{108x^3}$

14) $\sqrt{7}(\sqrt{28} + \sqrt{14})$

15) $(\sqrt{x} - 18)^2$

16) $(\sqrt{3} - 4)(\sqrt{2} - 6)$

17) $(\sqrt{13} + 2)(\sqrt{13} - 2)$

Solve.

18) $x = \sqrt{22x - 55} - 3$

19) $\sqrt{x^2 - 19} + 9 = 0$

20) $\sqrt[3]{x + 3} = \sqrt[3]{9x - 2}$

Perform the indicated operation and simplify. Write the result in the form a + bi.

21) $\sqrt{-81}$

22) $-\sqrt{-268}$

23) (3 - 4i) - (3 - i)

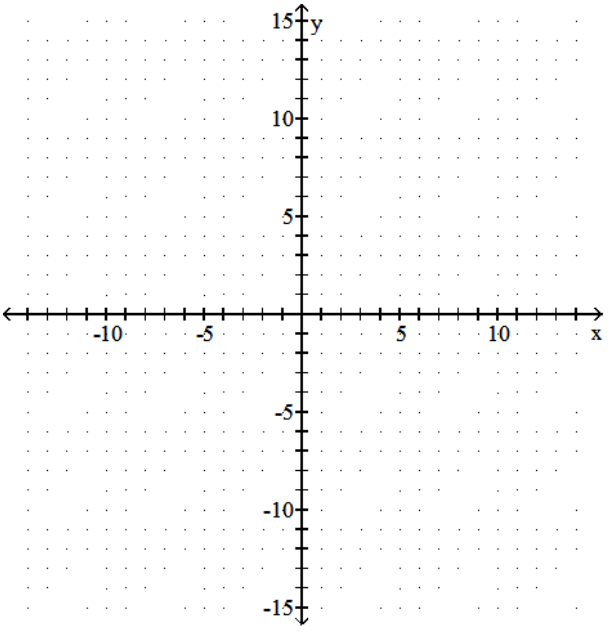
24) (2 + 4i)(2 - 4i)

25) $(9 - 6i)^2$

26) $\frac{9 + 2i}{4 - 6i}$

Identify the domain of f(x). Then complete the accompanying table and graph f(x).

27) $f(x) = \sqrt{x + 5}$



x	f(x)
-5	
-4	
-1	

Answers

1) $-x^2$

2) $\frac{1}{3}$

3) 2

4) $\frac{16x^4}{81}$

5) $-3a^3b$

6) $4y^{5/3}$

7) $12x^{24/5} - 4$

8) $5 \mid x \geq 1$

9) -7

10) $\frac{2\sqrt{x}}{x}$

11) $\frac{x - 8\sqrt{x} + 16}{x - 16}$

12) $\frac{\sqrt[3]{180xy^2}}{6y}$

13) $-46x(\sqrt{3x})$

14) $14 + 7\sqrt{2}$

15) $x - 36\sqrt{x} + 324$

16) $\sqrt{6} - 6\sqrt{3} - 4\sqrt{2} + 24$

17) $13 - 4 = 9$

18) $x = 8$

19) No solution

20) $\frac{5}{8}$

21) $0 + 9i$

22) $0 - 2i\sqrt{67}$

23) $0 - 3i$

24) $20 + 0i$

25) $45 - 108i$

26) $\frac{6}{13} + \frac{31}{26}i$

27) $x \geq -5$

Interval Notation $[-5, \infty)$

Set Notation $\{x \mid x \geq -5\}$