Math 115 Name_____
Sample Test Chapter 10

**Use radical notation to write the expression. Simplify if possible.**

1) $(2x + 1)^{4/5}$ 1) _____

**Use rational exponents to simplify the following.**

2) $\sqrt[9]{y^{15}z^9}$ 2) _____

**Use rational exponents to write as a single radical expression.**

3) $\sqrt[6]{x} \cdot \sqrt[3]{x^2}$ 3) _____

**Use the properties of exponents to simplify the expression. Write with positive exponents.**

4) $\dfrac{y^{3/4}}{y^{1/4}}$ 4) _____

5) $x^{1/8} \cdot x^{7/8}$ 5) _____

**Simplify the radical expression. Assume that all variables represent positive real numbers.**

6) $\dfrac{\sqrt{189x^5y^6}}{\sqrt{3y^4}}$ 6) _____

7) $\sqrt[5]{32\,x^3\,y^{29}}$ 7) _____

8) $\sqrt{200k^7q^8}$ 8) _____

**Use the product rule to multiply. Assume all variables represent positive real numbers.**

9) $\sqrt[3]{8m^3} \cdot \sqrt[3]{125m^3}$ 9) _____

**Add or subtract. Assume all variables represent positive real numbers.**

10) $\sqrt{2} + 6\sqrt{128} + 3\sqrt{8}$ 10) _____

**Multiply, and then simplify if possible. Assume all variables represent positive real numbers.**

11) $2\sqrt{7}(\sqrt{11} + \sqrt{7})$ 11) _____

**Rationalize the denominator and simplify. Assume that all variables represent positive real numbers.**

12) $\sqrt[3]{\dfrac{4}{9x^2}}$ 12) _____

13) $\dfrac{\sqrt{2}}{\sqrt{13}}$ 13) _____

**Solve.**

14) When an object is dropped to the ground from a height of h meters, the time it takes for the object to reach the ground is given by the equation $t = \sqrt{\frac{h}{4.9}}$, where t is measured in seconds. If an object hits the ground after falling for 2 seconds, find the height from which the object was dropped. 14) _____

15) $\sqrt{x + 50} - \sqrt{x + 2} = 6$ 15) _____

16) $\sqrt{3 - x} = x - 1$ 16) _____

17) $\sqrt{2x} = -6$ 17) _____

18) Scott set up a volleyball net in his backyard. One of the poles, which forms a right angle with the ground, is 7 feet high. To secure the pole, he attached a rope from the top of the pole to a stake 9 feet from the bottom of the pole. To the nearest tenth of a foot, find the length of the rope. 18) _____

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

19) $(7 + 4i) + (6 - 4i)$ 19) _____

20) $\frac{6}{7 - 2i}$ 20) _____

21) $\frac{2}{5i}$ 21) _____

**Write in terms of i.**

22) $\sqrt{-49}$ 22) _____

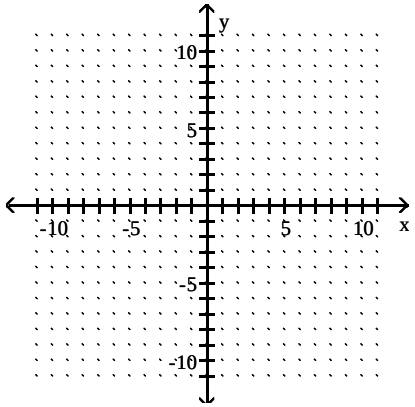
**Find the root. Use absolute value bars when necessary.**

23) $\sqrt[6]{(3xz)^6}$ 23) _____

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

24) $f(x) = \sqrt{x - 3}$ 24) _____

| x | f(x) |
|---|---|
| 3 | |
| 4 | |
| 7 | |



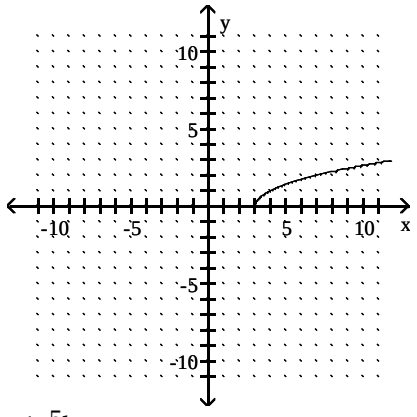
**Raise to the power or find the root. Assume that all variables represent positive numbers. Write with only positive exponents.**

25) $\sqrt[3]{-64a^{15}b^3}$ 25) _____

26) $\left(\frac{64x^3}{125}\right)^{2/3}$ 26) _____

Answer Key
Testname: MATH115ST10P09

1) $\sqrt[5]{(2x+1)^4}$
2) $y^{5/3}z$
3) $\sqrt[6]{x^5}$
4) $y^{1/2}$
5) x
6) $3x^2y\sqrt{7x}$
7) $2y^5\sqrt[5]{x^3y^4}$
8) $10k^3q^4\sqrt{2k}$
9) $10m^2$
10) $55\sqrt{2}$
11) $2\sqrt{77}+14$
12) $\frac{\sqrt[3]{12x}}{3x}$
13) $\frac{\sqrt{26}}{13}$
14) 19.6 m
15) –1
16) 2
17) ∅
18) 11.4 ft.
19) 13
20) $\frac{42}{53}+\frac{12}{53}i$
21) $-\frac{2}{5}i$
22) 7i
23) $3|xz|$
24) [3, ∞)




25) $-4a^5b$
26) $\frac{16x^2}{25}$