

EAST LOS ANGELES COLLEGE
MATH 125 (INTERMEDIATE ALGEBRA) WORKSHEET SECTION 10.1

NAME:

Find all square roots of the number.

1) 4900

6) $-\sqrt[4]{103}$

Evaluate the root, if possible.

2) $\sqrt[3]{-125}$

Simplify. Assume the variable represents any real number.

7) $\sqrt{196y^6}$

Simplify. Assume variables represent nonnegative values.

3) $\sqrt{169x^{16}y^8}$

8) $\sqrt{(5y - 3)^2}$

Find the indicated value of the function.

9) $f(x) = \sqrt{4x - 14}$, find $f(5)$.

4) $\sqrt[7]{a^{35}b^{21}}$

Find the domain.

10) $f(x) = \sqrt{x + 2}$

Use a calculator to approximate the root to the nearest thousandth.

5) $-\sqrt{69}$

Rewrite using radical notation and evaluate.

1) $729^{1/3}$

6) $\frac{(3v^{7/2})^2}{v^3}$

Represent the radical as a radical with a smaller root index. Assume any variables represent nonnegative values.

2) $32^{4/5}$

7) $\sqrt[6]{27}$

Write in exponential form.

3) $\sqrt[8]{m^3}$

8) $\sqrt[6]{25}$

Perform the indicated operation. Write the result using a radical.

4) $\frac{1}{\sqrt[4]{15^3}}$

9) $\sqrt[4]{w} \cdot \sqrt[5]{w^2}$

Use the rules of exponents to simplify.

5) $(5a^{1/7}b^{5/7})^3$

10) $\frac{\sqrt[7]{u^4}}{\sqrt[9]{u^4}}$

Find the product and write the answer in simplest form.
Assume variables represent nonnegative values.

1) $\sqrt[3]{xy^5} \cdot \sqrt[3]{x^{13}y^{11}}$

5) $\sqrt[3]{216x^4y^5}$

Use the quotient rule to simplify. Assume variables represent nonnegative values.

2) $\sqrt{\frac{21}{81}}$

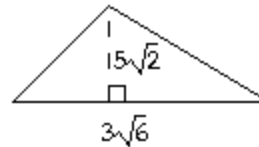
Find the product and write the answer in simplest form.
Assume variables represent nonnegative values.

6) $\sqrt{\frac{7y^7}{3}} \cdot \sqrt{\frac{35y^7}{27}}$

3) $\sqrt[4]{\frac{7t^2}{16x^8}}$

Write an expression in simplest form for the area of the figure.

7)



Simplify. Assume variables represent nonnegative values.

4) $\sqrt{162x^2}$

EAST LOS ANGELES COLLEGE **NAME:**
MATH 125 (INTERMEDIATE ALGEBRA) WORKSHEET SECTION 10.4

Simplify the radicals and then find the sum or difference.
Assume all variables have nonnegative values.

1) $\sqrt{28} - \sqrt{175}$

2) $8\sqrt{108} + 10\sqrt{48} + 9\sqrt{27}$

Find the product.

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

Multiply the conjugates. Assume all variables have nonnegative values.

6) $(\sqrt{7} - \sqrt{2})(\sqrt{7} + \sqrt{2})$

Multiply using FOIL. Assume all variables have nonnegative values.

3) $(\sqrt{7} + 7)(\sqrt{6} - 3)$

Simplify.

7) $\sqrt{2} \cdot \sqrt{14} + \sqrt{125} \cdot \sqrt{35}$

4) $(3\sqrt{7} + -4\sqrt{3})(4\sqrt{5} + 5\sqrt{17})$

Rationalize the denominator. Assume variables represent non-negative values.

1) $\frac{3}{\sqrt{14}}$

2) $\sqrt{\frac{49}{2}}$

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

4) $\sqrt[3]{\frac{625x^4}{5x}}$

Rationalize the denominator and simplify.

5) $\frac{7 - \sqrt{6}}{7 + \sqrt{6}}$

6) $\frac{\sqrt{3}}{3\sqrt{5} - \sqrt{3}}$

Rationalize the numerator.

7) $\frac{7 + \sqrt{6}}{3}$

Solve.

1) $\sqrt{2k+1} = 17$

4) $\sqrt{x+7} + 5 = x$

Solve. First isolate the radical term.

2) $\sqrt[4]{2x-4} + 5 = 7$

5) $\sqrt{2x+3} - \sqrt{x+1} = 1$

Solve.

3) $\sqrt{x+3} = x-3$

$$6) \sqrt{x+6} + \sqrt{2-x} = 4$$

Write the number as a product of a real number and i .
Simplify the radical expression.

1) $\sqrt{-160}$

6) $\frac{34}{3 + 5i}$

Multiply.

2) $(3 - 5i)(7 + 6i)$

7) $\frac{7 - 5i}{5 + 2i}$

3) $(2 - 9i)^2$

4) $(3 - 5i)(3 - 9i)$

Find the power of i .

8) i^9

Write the quotient in standard form.

5) $\frac{9 - i}{9i}$

9) i^{-8}

Answer Key WORKSHEET 10.1

Testname: W_10_1

- 1) ± 70
- 2) -5
- 3) $13x^8y^4$
- 4) a^5b^3
- 5) -8.307
- 6) -3.186
- 7) $14|y^3|$
- 8) $|5y - 3|$
- 9) $\sqrt{6}$
- 10) $\{x \mid x \geq -2\}$ or $[-2, \infty)$

Answer Key WORKSHEET 10.4

Testname: W_10_4

- 1) $-3\sqrt{7}$
- 2) $115\sqrt{3}$
- 3) $\sqrt{42} - 3\sqrt{7} + 7\sqrt{6} - 21$
- 4) $12\sqrt{35} + 15\sqrt{119} - 16\sqrt{15} - 20\sqrt{51}$
- 5) $54 - 18\sqrt{5}$
- 6) 5
- 7) $27\sqrt{7}$

Answer Key WORKSHEET 10.5

Testname: W_10_5

- 1) $\frac{3\sqrt{14}}{14}$
- 2) $\frac{7\sqrt{2}}{2}$
- 3) $\frac{\sqrt[3]{150}}{5}$
- 4) $5x$
- 5) $\frac{55 - 14\sqrt{6}}{43}$
- 6) $\frac{1}{14}(\sqrt{15} + 1)$
- 7) $\frac{43}{21 - 3\sqrt{6}}$

Answer Key WORKSHEET 10.2

Testname: W_10_2

- 1) $\sqrt[3]{729} = 9$
- 2) $\sqrt[5]{324} = 16$
- 3) $m^{3/8}$
- 4) $15^{-3/4}$
- 5) $125a^{3/7}b^{15/7}$
- 6) $9v^4$
- 7) $\sqrt{3}$
- 8) $\sqrt[3]{5}$
- 9) $\sqrt[20]{w^{13}}$
- 10) $\sqrt[63]{u^8}$

Answer Key WORKSHEET 10.6

Testname: W_10_6

- 1) 144
- 2) 10
- 3) 6
- 4) 9
- 5) 3, -1
- 6) -2

Answer Key WORKSHEET 10.7

Testname: W_10_7

- 1) $4i\sqrt{10}$
- 2) $51 - 17i$
- 3) $-77 - 36i$
- 4) $-36 - 42i$
- 5) $-\frac{1}{9} - i$
- 6) $3 - 5i$
- 7) $\frac{25}{29} - \frac{39}{29}i$
- 8) i
- 9) 1

Answer Key WORKSHEET 10.3

Testname: W_10_3

- 1) $x^4y^5\sqrt[3]{x^2y}$
- 2) $\frac{\sqrt{21}}{9}$
- 3) $\frac{\sqrt[4]{7t^2}}{2x^2}$
- 4) $9x\sqrt{2}$
- 5) $6xy\sqrt[3]{xy^2}$
- 6) $\frac{7y^7\sqrt{5}}{9}$
- 7) $15\sqrt{3}$