

# ALEKS® Radicals Quiz #1

Beginning and Intermediate Algebra Combined / MATH 103 - Fall 2014 – 504 (Prof. Miller)

Student Name/ID:

**Instructor Note:**

Directions: Every problem is worth two points. One point is for trying the problem and showing your work and one point is for getting the correct answer. There are an additional five points for demonstrating the study strategy that is posted on the board and talked about at the beginning of class.

1. Multiply.

$$(\sqrt{10} - 2)(2\sqrt{5} - 3)$$

Simplify your answer as much as possible.

2. Write the following expression in simplified radical form.

$$\sqrt[3]{40t^8w^3}$$

Assume that all of the variables in the expression represent positive real numbers.

3. Fill in the table using this function rule.

$$f(x) = \sqrt{x} + 6$$

Simplify your answers as much as possible.

$x$	$f(x)$
-9	
0	
4	
25	

4. Simplify.

$$\sqrt{4y^{14}}$$

Assume that the variable  $y$  represents a positive real number.

5. Solve for  $u$  where  $u$  is a real number.

$$\sqrt[3]{u} = 5$$

6. Simplify.

$$\sqrt{\frac{y^{10}z^9}{2}} \cdot \frac{\sqrt{8x^7}}{\sqrt{x^5y^6z^9}}$$

Assume that all variables represent positive numbers.

7. Simplify.

$$\sqrt{8x^6y^4}\sqrt{2x^2y^9}$$

Assume that all variables represent positive real numbers.

8. Solve for  $u$  where  $u$  is a real number.

$$u^{\frac{1}{4}} = 3$$

9. Simplify. Write your answers without exponents.

$$\left(\frac{1}{9}\right)^{\frac{3}{2}} = \boxed{\phantom{00}}$$

$$32^{-\frac{4}{5}} = \boxed{\phantom{00}}$$

10. Simplify.

$$\sqrt{8t^5u^8}$$

Assume that all variables represent positive real numbers.

11. Write the following in simplified radical form.

$$\sqrt[3]{32}$$

12. Simplify.

$$\sqrt{\frac{9}{49}}$$

Be sure to write your answer in simplest form.

13. Solve for  $y$  where  $y$  is a real number.

$$\sqrt{11y - 30} = y$$

14. Simplify the expression.

$$\frac{a^{\frac{3}{2}} a^{-\frac{1}{4}}}{a^{\frac{1}{3}}}$$

Write your answer using only positive exponents.  
Assume that all variables are positive real numbers.

15. Simplify as much as possible.

$$4x\sqrt{27u^3} - u\sqrt{75ux^2}$$

Assume that all variables represent positive real numbers.

# Radicals Quiz #1 Answers for class Beginning and Intermediate Algebra Combined / MATH 103 - Fall 2014 – 504

1.  $10\sqrt{2} - 3\sqrt{10} - 4\sqrt{5} + 6$

2.  $2t^2 w \sqrt[3]{5t^2}$

3.

$x$	$f(x)$
-9	Not a real number
0	6
4	8
25	11

4.  $2y^7$

5.  $u = 125$

6.  $2y^2 x$

7.  $4x^4 y^6 \sqrt{y}$

8.  $u = 81$

9.

$$\left(\frac{1}{9}\right)^{\frac{3}{2}} = \frac{1}{27}$$

$$32^{-\frac{4}{5}} = \frac{1}{16}$$

10.  $2t^2 u^4 \sqrt{2t}$

11.  $2\sqrt[3]{4}$

12.  $\frac{3}{7}$

13.  $y = 6, 5$

14.  $\frac{11}{a^{12}}$

15.  $7ux\sqrt{3u}$