Algebra 2 Test 2022

#1 Points possible: 2. Total attempts: 1

Find the following radicals.

- $\sqrt{-81}$	a. 9
- $-\sqrt{81}$	b. Not a real number
- $-\sqrt{-81}$	c. -9
- $\sqrt{81}$	

#2 Points possible: 1. Total attempts: 1

Find the following root.

$-\sqrt[3]{27} =$ _____

#3 Points possible: 1. Total attempts: 1

Find the following root.

$-\sqrt[4]{16} =$ _____

#4 Points possible: 2. Total attempts: 1

Assume all variables are positive, and find the following root:

$\sqrt[3]{a^3b^6} =$ _____

#5 Points possible: 3. Total attempts: 1

Assume all variables are positive, and find the following root:

$\sqrt[3]{-64a^{12}b^6} =$ _____

#6 Points possible: 1. Total attempts: 1

Convert the following radical to an expression with rational exponents and simplify if possible. Assume all variables are positive numbers.

$\sqrt[8]{y^5} =$

_____

#7 Points possible: 1. Total attempts: 1

Use the definition of rational exponents to write each of the following with the appropriate root. Then simplify:

$4^{\frac{1}{2}} =$ _____

#8 Points possible: 1. Total attempts: 1

Use the definition of rational exponents to write each of the following with the appropriate root. Then simplify:

$(-125)^{\frac{1}{3}} =$ _____

#9 Points possible: 1. Total attempts: 1

Use the definition of rational exponents to write each of the following with the appropriate root. Then simplify:

$\left(\frac{25}{4}\right)^{\frac{1}{2}} =$ _____

#10 Points possible: 1. Total attempts: 1

Use the definition of rational exponents to write each of the following with the appropriate root. Then simplify:

$\left(\frac{625}{16}\right)^{\frac{1}{4}} =$ _____

#11 Points possible: 2. Total attempts: 1

Use the definition of rational exponents to write each of the following with the appropriate root. Then simplify:

$64^{\frac{4}{3}} =$ _____

#12 Points possible: 2. Total attempts: 1

Simplify the expression. Remember, negative exponents give reciprocals.

$625^{-\frac{3}{4}} =$ _____

#13 Points possible: 2. Total attempts: 1

Simplify the expression. Remember, negative exponents give reciprocals.

$\left(\frac{64}{49}\right)^{-\frac{1}{2}} =$ _____

#14 Points possible: 2. Total attempts: 1

Simplify the expression. Remember, negative exponents give reciprocals.

$\left(\frac{8}{27}\right)^{-\frac{2}{3}} =$ _____

#15 Points possible: 2. Total attempts: 1

Use the properties of exponents to simplify the following as much as possible. Assume all bases are positive.

$x^{\frac{5}{6}} \cdot x^{\frac{1}{6}} =$ _____

#16 Points possible: 2. Total attempts: 1

Use the properties of exponents to simplify the following as much as possible. Assume all bases are positive.

$\frac{x^{\frac{1}{6}}}{x^{\frac{5}{6}}} =$ _____

#17 Points possible: 3. Total attempts: 1

Use the properties of exponents to simplify the following as much as possible. Assume all bases are positive.

$\left(x^{\frac{2}{5}} y^{\frac{2}{5}} z^{\frac{2}{3}}\right)^{\frac{5}{6}} =$ _____

#18 Points possible: 2. Total attempts: 1

Use the product property for radicals to simplify the following radical expressions as much as possible. Assume all variables represent positive numbers.

$\sqrt{18} =$ _____

#19 Points possible: 2. Total attempts: 1

Use the product property for radicals to simplify the following radical expressions as much as possible. Assume all variables represent positive numbers.

$\sqrt{720} =$ _____

#20 Points possible: 2. Total attempts: 1

Use the product property for radicals to simplify the following radical expressions as much as possible. Assume all variables represent positive numbers.

$\sqrt[3]{320} =$ _____

#21 Points possible: 2. Total attempts: 1

Use the product property for radicals to simplify the following radical expressions as much as possible. Assume all variables represent positive numbers.

$\sqrt[4]{162} =$ _____

#22 Points possible: 3. Total attempts: 1

Use the product property for radicals to simplify the following radical expressions as much as possible. Assume all variables represent positive numbers.

$\sqrt{20x^3} =$ _____

#23 Points possible: 3. Total attempts: 1

Use the product property for radicals to simplify the following radical expressions as much as possible. Assume all variables represent positive numbers.

$\sqrt[3]{250a^8b^{12}} =$ _____

#24 Points possible: 2. Total attempts: 1

Use the product property for radicals to simplify the following radical expressions as much as possible. Assume all variables represent positive numbers.

$\sqrt{96a^2b^2c^3} =$ _____

#25 Points possible: 2. Total attempts: 1

Use the product property for radicals to simplify the following radical expressions as much as possible. Assume all variables represent positive numbers.

$\sqrt[3]{1080a^2b^3c^5} =$ _____

#26 Points possible: 3. Total attempts: 1

Use the product property for radicals to simplify the following radical expressions as much as possible. Assume all variables represent positive numbers.

$\sqrt[3]{135a^4b^2} =$ _____

#27 Points possible: 2. Total attempts: 1

Simplify the expression. Do not assume the variables represent positive numbers.

$\sqrt{64y^2} =$ _____

#28 Points possible: 3. Total attempts: 1

Simplify the expression. Do not assume the variables represent positive numbers.

$\sqrt{125x^3y^2} =$ _____

#29 Points possible: 3. Total attempts: 1

Assume all variables are positive, and find the following root:

$\sqrt[5]{32a^{15}b^{15}} =$ _____

#30 Points possible: 2. Total attempts: 1

Use the properties of exponents to simplify the following as much as possible. Assume all bases are positive.

$$\frac{x^{\frac{3}{5}}y^{\frac{5}{6}}}{x^{\frac{5}{6}}y^{\frac{4}{5}}} =$$ _____

#31 Points possible: 2. Total attempts: 1

Use the product property for radicals to simplify the following radical expressions as much as possible. Assume all variables represent positive numbers.

$\sqrt{48x^3} =$ _____
