

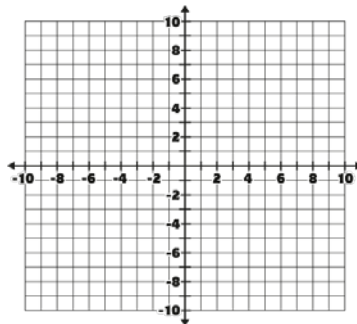
NAME _____

BELL RINGER

1.) Simplify $\sqrt{200}$

2.) Simplify $\frac{5^6}{5^8}$. Write your answer using only positive exponents.

3.) Graph $y = 2x^2 - 2$



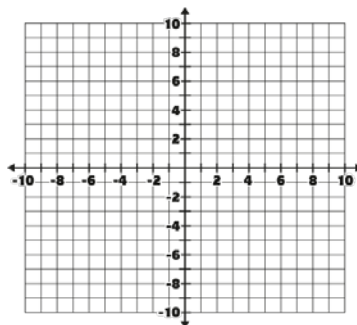
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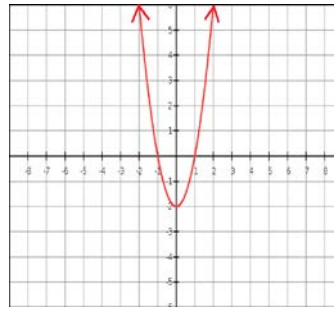
NAME ANSWER KEY

BELL RINGER

1.) Simplify $\sqrt{200}$ $10\sqrt{2}$

2.) Simplify $\frac{5^6}{5^8}$. Write your answer using only positive exponents. $\frac{1}{5^2} = \frac{1}{25}$

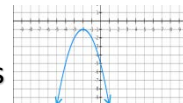
3.) Graph $y = 2x^2 - 2$ 



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Nth Roots and Rational Exponents

NAME _____

Evaluate each root using a calculator. Round your answer to the nearest hundredth if needed.

$$\sqrt{81} = \underline{\hspace{2cm}}$$

$$\sqrt[3]{49} = \underline{\hspace{2cm}}$$

$$\sqrt[4]{64} = \underline{\hspace{2cm}}$$

$$\sqrt[3]{81} = \underline{\hspace{2cm}}$$

$$\sqrt{49} = \underline{\hspace{2cm}}$$

$$\sqrt[3]{64} = \underline{\hspace{2cm}}$$

$$(\sqrt{9})^3 = \underline{\hspace{2cm}}$$

$$(\sqrt[5]{100})^2 = \underline{\hspace{2cm}}$$

$$(\sqrt[3]{50})^2 = \underline{\hspace{2cm}}$$

Use a calculator to evaluate each rational exponent. Round your answer to the nearest hundredth if needed.

$$81^{1/2} = \underline{\hspace{2cm}}$$

$$49^{1/3} = \underline{\hspace{2cm}}$$

$$64^{1/4} = \underline{\hspace{2cm}}$$

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$$49^{1/2} = \underline{\hspace{2cm}}$$

$$64^{1/3} = \underline{\hspace{2cm}}$$

$$9^{3/2} = \underline{\hspace{2cm}}$$

$$100^{2/5} = \underline{\hspace{2cm}}$$

$$50^{2/3} = \underline{\hspace{2cm}}$$

What do you notice about roots and rational exponents from the examples above?

Nth Roots and Rational Exponents

NAME ANSWER KEY

Evaluate each root using a calculator. Round your answer to the nearest hundredth if needed.

$$\sqrt{81} = 9$$

$$\sqrt[3]{49} = 3.66$$

$$\sqrt[4]{64} = 2.83$$

$$\sqrt[3]{81} = 4.33$$

$$\sqrt{49} = 7$$

$$\sqrt[3]{64} = 4$$

$$(\sqrt{9})^3 = 27$$

$$(\sqrt[5]{100})^2 = 6.31$$

$$(\sqrt[3]{50})^2 = 13.57$$

Use a calculator to evaluate each rational exponent. Round your answer to the nearest hundredth if needed.

$$81^{1/2} = 9$$

$$49^{1/3} = 3.66$$

$$64^{1/4} = 2.83$$

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$$49^{1/2} = 7$$

$$64^{1/3} = 4$$

$$9^{3/2} = 27$$

$$100^{2/5} = 6.31$$

$$50^{2/3} = 13.57$$

What do you notice about roots and rational exponents from the examples above? **Answers will vary. Discuss students observations and tie to definition of rational exponents as opportunities arise.**

Score: ____/____

EXIT SLIP

NAME _____

STANDARD: HSN-RN.A.1, HSN-RN.A.2

OBJECTIVE: Students will be able to find the nth root of numbers. Students will be able to evaluate expressions with rational exponents.

Evaluate the expression $9^{-\frac{1}{2}}$ without using a calculator.

On a scale from 1-5, 5 being the greatest, how well do you understand this standard? Circle your number below.

1 2 3 4 5

Score: ____/____

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EXIT SLIP

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Evaluate the expression $9^{-\frac{1}{2}}$ without using a calculator.

$\frac{1}{3}$

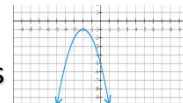
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A

Find the 5th root of 243.

B

Find the 3rd root of -64.

C

Write the expression $5^{\frac{2}{3}}$ in radical form.

D

Write the expression $2^{\frac{3}{4}}$ in radical form.

E

Write the expression $(\sqrt[3]{5})^4$ in exponential form.

F

Write the expression $(\sqrt[4]{5})^{-1}$ in exponential form.

G

Evaluate the expression $\sqrt[5]{37}$ using a calculator. Round your answer to two decimal places when appropriate.

H

Evaluate the expression $(3)^{5/2}$ using a calculator. Round your answer to two decimal places when appropriate.

I

Evaluate the expression $(\sqrt[4]{16})^3$
without using a calculator.

J

Evaluate the expression
 $(-27)^{-1/3}$ without using a
calculator.

Nth Roots & Rational Exponents Gallery Walk Student Recording Sheet

NAME _____

A	F
B	G
C	H
D	I
E	J

Nth Roots & Rational Exponents Gallery Walk Student Recording Sheet

NAME _____

A	F
B	G
C	H
D	I
E	J

Gallery Walk Problem Answer Key

A.) 3

F.) $\frac{1}{5^{\frac{1}{4}}}$

B.) -4

G.) 2.06

C.) $(\sqrt[3]{5})^2$

H.) 15.59

D.) $(\sqrt[4]{2})^3$

I.) 8

E.) $5^{\frac{4}{3}}$

J.) $-\frac{1}{3}$

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