

## T6-4

## Stick Quiz

Simplify

1.  $3\sqrt[3]{16a^2} \cdot 2\sqrt[3]{4a}$

3.  $\frac{\sqrt{2}-1}{\sqrt{8}}$

2.  $\frac{4}{3+\sqrt{3}}$

4.  $\sqrt[5]{\frac{-1024x^7}{243}}$

Feb 26-12:39 PM

$$\sqrt[5]{\frac{-1024x^7}{243}} = \frac{\sqrt[5]{-1024} \sqrt[5]{x^7}}{\sqrt[5]{243}} = \frac{-\sqrt[5]{2^{10}} \sqrt[5]{x^7}}{\sqrt[5]{3^5}}$$

$\sqrt[5]{-1024} = -4$ 
 $\frac{-2^2 \times \sqrt[5]{x^2}}{3}$ 
 $\frac{-4}{3} \times \sqrt[5]{x^2}$

1024  
 (2) 512  
 2 256  
 2 128  
 2 64  
 2 32  
 (2) 16  
 2 8  
 2 4  
 2 2

Feb 6-12:09 PM

$$\frac{4(3-\sqrt{3})}{3+\sqrt{3}(3-\sqrt{3})} = \frac{12-4\sqrt{3}}{6} = \frac{12}{6} - \frac{4\sqrt{3}}{6}$$

$$9 - \cancel{3\sqrt{3}} + \cancel{3\sqrt{3}} - 3 \qquad 2 - \frac{2\sqrt{3}}{3}$$

Feb 6-12:07 PM

?      ?      ?

# Questions

?      ?      ?      ?

## on

?      ?      ?      ?

# Homework

?      ?      ?

?      ?      ?

Feb 26-12:57 PM

# LESSON 6-6 Rational Exponents

Target 6-4

I can... simplify radical expressions by adding, subtracting, multiplying and dividing.

Feb 26-12:57 PM

Transform into Radical form

$$\left( a^{\frac{1}{7}} \right)^1 \quad \left( a^{\frac{1}{3}} \right)$$

Feb 26-12:40 PM

Transform into Exponent Form.

$$\sqrt[2]{w}$$

$$w^{\frac{1}{2}}$$

$$\sqrt[5]{x}$$

$$x^{\frac{1}{5}}$$

Feb 26-1:00 PM

Evaluate and simplify rational exponents

$$49^{-\frac{1}{2}}$$

Ahh Negative Exponents!!

$$\frac{1}{49^{\frac{1}{2}}}$$

$$\frac{1}{\sqrt{49}} = \frac{1}{7}$$

Feb 26-12:42 PM

Evaluate and simplify rational exponents

$$32^{\frac{2}{5}} = \sqrt[5]{(32)^2}$$

power  
↑  
index

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

$$\sqrt[5]{2^{10}} = 2^2 = 4$$

2  
2  
2  
2  
2

32  
16  
8  
4  
2

Feb 26-12:43 PM

You Try!!

Evaluate and simplify rational exponents

1.  $25^{-\frac{1}{2}}$

$$2^3 \cdot 2^4 = 2^7$$

$$(2^3)^4$$

2.  $16^{\frac{3}{4}}$

8

$$\sqrt[4]{(16)^3}$$

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

$$\sqrt[4]{2^{12}} = 2^3$$

Feb 26-12:46 PM

Simplify

$$y^{\frac{1}{7}} \cdot y^{\frac{4}{7}} = y^{\frac{5}{7}}$$

$$\sqrt[7]{y^5}$$

Remember:

When Multiplying  
exponents -- You add!!

Feb 26-12:46 PM

Simplify.

$$x^{-\frac{2}{3}}$$

←----- Get rid of Negatives!!

$$\frac{1}{x^{\frac{2}{3}}} \cdot \frac{x^{\frac{1}{3}}}{x^{\frac{1}{3}}} = \frac{x^{\frac{1}{3}}}{x} = \frac{\sqrt[3]{x}}{x}$$

Get rid of Radical

$$\frac{1}{\sqrt[3]{x^2}} \cdot \frac{\sqrt[3]{x}}{\sqrt[3]{x}} = \frac{\sqrt[3]{x}}{\sqrt[3]{x^3}} = \frac{\sqrt[3]{x}}{x}$$

Feb 26-12:53 PM

$$d^{-\frac{5}{6}}$$

$$\frac{\sqrt[6]{d}}{d}$$

Jan 15-9:29 AM

You Try!! Simplify.

3.  $x^{\frac{1}{5}} \cdot x^{\frac{2}{5}}$

4.  $y^{-\frac{3}{4}}$

Feb 26-12:53 PM

$$\frac{1}{3} \cdot 3 = 1$$

$$\begin{aligned} \sqrt[3]{(5p-7)} + 3 &= 5 \\ \left( (5p-7)^{\frac{1}{3}} \right)^{-3} &= 2^{-3} \\ 5p-7 &= 8 \end{aligned}$$