

Warm - Up

Homework - WS

1. Write the equation of the line that passes through (3, 6) and (-2, 8).

2. Simplify:

- a) -4^3 b) $(6x^2y)^0$

3. Write in standard form: 651.319×10^{-5}

Answers to Integer Exponents and Scientific Notation WS

- 1) $\frac{1}{4^5}$ 2) -128 3) 1 4) $\frac{9x^5}{x^2}$
 5) $\frac{1}{81}$ 6) $-\frac{1}{36}$ 7) $\frac{27}{16}$ 8) $4.521,806$
 9) 0.000021739

Objectives

Students will be able to write numbers in scientific notation.

Students will be able to simplify expressions with rational exponents.

Example 5: Comparing and Ordering Numbers in Scientific Notation

Order the list of numbers from least to greatest.

- 1.3×10^{-2} , 6.3×10^3 , 4.1×10^6 , 2.1×10^6 , 1×10^{-2} , 5.4×10^{-3}

- Handwritten list from least to greatest:
 5.4×10^{-3}
 1.0×10^{-2}
 1.3×10^{-2}
 6.3×10^3
 2.1×10^6
 4.1×10^6

- 5.2×10^{-3} , 3×10^{14} , 4×10^{-3} , 2×10^{-12} , 4.5×10^{30} , 4.5×10^{14}

Simplify each radical.

1. $\sqrt{45}$

2. $\sqrt{28}$

3. $\sqrt[3]{81}$
 $\begin{matrix} \wedge \\ 3 & 27 \\ & \wedge \\ & 3 & 9 \\ & & \wedge \\ & & 3 & 3 \end{matrix}$

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

4. $\sqrt{64}$
 $\begin{matrix} \wedge \\ 2 & 32 \\ & \wedge \\ & 2 & 16 \\ & & \wedge \\ & & 2 & 8 \\ & & & \wedge \\ & & & 2 & 4 \\ & & & & \wedge \\ & & & & 2 & 2 \end{matrix}$

$\boxed{2\sqrt{2}}$

Simplify each radical.

1) $\sqrt[3]{512}$
 $\begin{matrix} \wedge \\ 2 & 256 \\ & \wedge \\ & 2 & 128 \\ & & \wedge \\ & & 2 & 64 \\ & & & \wedge \\ & & & 2 & 32 \\ & & & & \wedge \\ & & & & 2 & 16 \\ & & & & & \wedge \\ & & & & & 2 & 8 \\ & & & & & & \wedge \\ & & & & & & 2 & 4 \\ & & & & & & & \wedge \\ & & & & & & & 2 & 2 \end{matrix}$

3) $\sqrt[3]{224}$
 $\begin{matrix} \wedge \\ 2 & 112 \\ & \wedge \\ & 2 & 56 \\ & & \wedge \\ & & 2 & 28 \\ & & & \wedge \\ & & & 2 & 14 \\ & & & & \wedge \\ & & & & 2 & 7 \end{matrix}$

$\boxed{2\sqrt[3]{7}}$

2) $\sqrt[3]{32}$
 $\begin{matrix} \wedge \\ 2 & 32 \\ & \wedge \\ & 2 & 16 \\ & & \wedge \\ & & 2 & 8 \\ & & & \wedge \\ & & & 2 & 4 \\ & & & & \wedge \\ & & & & 2 & 2 \end{matrix}$

$\boxed{2\sqrt[3]{4}}$

2) $\sqrt[3]{32}$
 $\begin{matrix} \wedge \\ 2 & 16 \\ & \wedge \\ & 2 & 4 \\ & & \wedge \\ & & 2 & 2 \end{matrix}$

$\boxed{2}$

4) $\sqrt[3]{56}$
 $\begin{matrix} \wedge \\ 2 & 28 \\ & \wedge \\ & 2 & 14 \\ & & \wedge \\ & & 2 & 7 \end{matrix}$

$\boxed{2\sqrt[3]{7}}$

Simplify each radical.

5) $-4\sqrt[3]{48}$

6) $-3\sqrt[5]{256}$

7) $-7\sqrt[5]{448}$

8) $3\sqrt[5]{64}$

Daily Practice

Scientific Notation and Radical WS

$$\begin{array}{c}
 -4\sqrt[3]{48} \\
 \wedge \\
 \textcircled{2} \ 24 \\
 \wedge \\
 \textcircled{2} \ 12 \\
 \wedge \\
 \textcircled{2} \ 6
 \end{array}$$

$$\begin{array}{c}
 -3\sqrt[5]{256} \\
 \wedge \\
 \textcircled{2} \ 128 \\
 \wedge \\
 \textcircled{2} \ 64 \\
 \wedge \\
 \textcircled{2} \ 32 \\
 \wedge \\
 \textcircled{2} \ 16 \\
 \wedge \\
 \textcircled{2} \ 8
 \end{array}$$

$$\begin{array}{l}
 -4 \cdot 2 \sqrt[3]{6} \\
 \boxed{-8\sqrt[3]{6}}
 \end{array}$$

$$\begin{array}{l}
 -3 \cdot 2 \sqrt[5]{8} \\
 \boxed{-6\sqrt[5]{8}}
 \end{array}$$