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| Section 1: Write the following number sentences using exponents.1. 8 X 8 X 8 X 8 X 8 \_\_\_\_\_\_\_\_
2. 6 X 6 X 6 X 6 X 6 \_\_\_\_\_\_\_\_\_
3. 4 X 4 X 4 X 4 X 4 X 4 X 4 X 4 \_\_\_\_\_\_\_\_

**Write** the following numbers, which are expressed in exponential notation, **in expanded form and find their value.** 1. $(-3)^{4} $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. - $7^{2} $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 8³ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Section 2: Scientific NotationWrite the following numbers in standard form.1. 7.3 X 104 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 9.23 X 108 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 6.75 X 10-7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 4.5 X 10-3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Add or Subtract. Put your answer in scientific notation. (2 x $10^{5}$) – (1.9 x $10^{4}$) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(3.1 x $10^{-3}$) + (2.4 x $10^{-2}$) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Put the following numbers in scientific notation.1. 7,100,000 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 1,654,000,000 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 0.00098 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 0.0000075 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Put in correct scientific notation. Correct the exponents. 1. 278 X 104 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. .0926 X 10-5 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 300 X 1010  = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 0.6 X 10-4 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Multiply or Divide. Put your answer in scientific notation.1. $\frac{1.1 x 10^{-3} }{5.5 x 10^{-8} }$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. ($3.2 x 10^{5}$)($ 8.09 x 10^{7})$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Put the numbers in order from least to greatest. $ 7.1 x 10^{6}$, $7.8 x 10^{-3}, 7.9 x 10^{4}$

 $7.3 x 10^{-9}$,$ 7.4 x 10^{4}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Section 3: Irrational numbers. 1. http://2.bp.blogspot.com/_e-MNyCFKL20/TRExEPFcMKI/AAAAAAAAACI/_Jq4WRZ_44g/s1600/1-10_41660_lg.gifComplete the number line of perfect squares

$$\sqrt{36}$$ |
| Find the approximate square root of each number to the nearest tenth. 1. $\sqrt{2}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $\sqrt{22}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. $\sqrt{76}$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Circle the irrational numbers

http://crctlessons.com/images/repeating-decimals.jpg$π, $ 3.14, 7, 1.92, $\sqrt{93}$, $\sqrt{100}$$\frac{5}{6}, \frac{8}{3}, 0, $1.2367..., -8, -$ \frac{2}{3}$1. Place the numbers on the number line:

$\sqrt{4}$ , .5, - $\frac{2}{3}$, $\sqrt{2}$, - $\frac{8}{4}$, - $\sqrt{9}$, 2.3http://exchangedownloads.smarttech.com/public/content/7f/7f8088d5-90d1-477b-b50f-6d2aef31569b/previews/medium/0002.pngSection 4 Expressions and EquationsSimplify1. (-2)(4) + $(-3)^{2}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 7•2 + $5^{2}$ – 16 + (2-1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 5 - $(6-4)^{3}$+ $(-2)^{0} $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve1. -7n – 3 = 25 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $\frac{x}{20}$ – 4 = 12 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 12 + $\frac{3}{4}a$ =42 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 3b -3(-23+2b) = 48 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 5k + 3 = 2k + 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 | Section 5: Word Problems36. The area of the square rug in Milo’s classroom is $81ft^{2}$. What is the length of each side of the rug? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_37. Marsha stores her school supplies in a cube shaped box with a volume of$ 125in^{3}$. She sees that each face of the box is a square. What is the length of each edge of the top of the box? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. Venus has an approximate distance from the sun of 7.23 X 105 miles. What is this expressed in standard form? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The temperature of the core of the sun is 27,000,000ºF. What is this number expressed in scientific notation?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Section 6: Exponent Rules Simply. Write each answer as a single positive exponent. 1. $7^{-2} $ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $2a^{5} x 3a^{-1} $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 1. $(x^{5})^{4} $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $\frac{4x^{7}}{2x^{3}} $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. $99^{0} $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. $3^{6}x 3^{4} $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. $11^{12}÷ 11^{-3} $ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 1. $b^{-5} $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $5^{6}x 3^{4} $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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