

Name: KEY Week of: _____**REVIEW**

SHOW ALL WORK!!!!

1. Solve the equation.

$$\begin{array}{r}
 3x + 4 = 16 \\
 -4 \quad -4 \\
 \hline
 3x = 12 \\
 \frac{3x}{3} = \frac{12}{3} \\
 x = 4
 \end{array}$$

Check your answer by substituting in your value for x.

$$\begin{array}{r}
 12 + 4 = 16 \\
 3(4) + 4 = 16 \quad \checkmark
 \end{array}$$

2. Find the reciprocal of each number.

$$\frac{4}{5}, \underline{\frac{5}{4}} \quad 8, \underline{\frac{1}{8}}$$

$$-5, \underline{-\frac{1}{5}} \quad \frac{1}{3}, \underline{3}$$

A number times its reciprocal will always equal

$$\underline{1}$$

3. Simplify using a single exponent.

$$(5^7)^4 = \underline{5^{28}}$$

Check which rule is shown above?

 Power times a Power Power divided by a Power Power to a Power

4. Complete each equation.

$$-42 + 50 = \underline{8} \quad -37 + -12 = \underline{-49}$$

$$-18 - 15 = \underline{-33} \quad 27 - 35 = \underline{-8}$$

Standard: Solve real-world and other mathematical problems involving numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Interpret scientific notation that has been generated by technology, such as a scientific calculator, graphing calculator, or excel spreadsheet. (section 1-10 in book)

5. Find the product and express your answer in scientific notation.

$$(3.8 \times 10^9)(5 \times 10^3)$$

$$\begin{array}{r}
 4 \\
 3.8 \\
 \times 5 \\
 \hline
 19.0
 \end{array}$$

$$\begin{array}{r}
 19 \times 10^{12} \\
 \boxed{1.9 \times 10^{13}}
 \end{array}$$

6. Find the quotient and express your answer in scientific notation.

$$\frac{7.2 \times 10^{12}}{3 \times 10^4}$$

$$\begin{array}{r}
 24 \\
 3 \overline{)7.2} \\
 \underline{-6} \\
 12
 \end{array}$$

$$\boxed{2.4 \times 10^8}$$

7. Find the sum and express your answer in scientific notation.

$$7.6 \times 10^{11} + 2.4 \times 10^{12}$$

$$.76 \times 10^{12} + 2.4 \times 10^{12}$$

$$\begin{array}{r}
 2.4 \\
 + .76 \\
 \hline
 3.16
 \end{array}$$

$$\boxed{3.16 \times 10^{12}}$$

8. Find the difference and express your answer in scientific notation.

$$5.3 \times 10^3 - 8 \times 10^2$$

$$5.3 \times 10^3 - .8 \times 10^3$$

$$\begin{array}{r}
 5.3 \\
 - .8 \\
 \hline
 4.5
 \end{array}$$

$$\boxed{4.5 \times 10^3}$$

<p>9. Find the sum.</p> $3.6 \times 10^{-5} + 2.7 \times 10^{-6}$ $3.6 \times 10^{-5} + .27 \times 10^{-5}$ $\begin{array}{r} 3.6 \\ .27 \\ \hline 3.87 \end{array}$ 3.87×10^{-5}	<p>10. Find the product.</p> $(5.9 \times 10^{-7})(2 \times 10^{-9})$ $\begin{array}{r} 5.9 \\ 2 \\ \hline 11.8 \end{array}$ 11.8×10^{-16} 1.18×10^{-15}
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<p>11. What is the value of n in the equation below? Explain.</p> $1.9 \times 10^7 = (1 \times 10^5)(1.9 \times 10^n)$ <p>n = <u>2</u></p> <p>Explain: $10^5 \cdot 10^2 = 10^7$</p> <p><u>When multiplying powers add the exponents.</u></p>	<p>12. Which equation is true? Select all that apply.</p> <p><input checked="" type="checkbox"/> $(9.35 \times 10^6) - (6.7 \times 10^6) = 2.65 \times 10^6$</p> <p><input type="checkbox"/> $(5.43 \times 10^8) - (2.33 \times 10^8) = 3.1 \times 10^4$</p> <p><input checked="" type="checkbox"/> $(4.7 \times 10^4) + (8 \times 10^4) = 1.27 \times 10^5$</p> <p><input type="checkbox"/> $(7.08 \times 10^3) + (2.21 \times 10^3) = 9.29 \times 10^6$</p>
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Application Problems:

<p>13. The distance from the Earth to the Moon is approximately 1.2×10^9 feet. The Apollo 11 spacecraft was approximately 360 feet long. <u>About how many spacecraft of that length would fit end to end from Earth to the Moon?</u></p> $\frac{1.2 \times 10^9}{360} = \frac{1.2 \times 10^9}{3.6 \times 10^2}$ $.3 \times 10^7 \text{ or } 3.3 \times 10^6$	<p>14. The mass of Mars is 6.42×10^{23} kilograms. The mass of Mercury is 3.3×10^{23} kilograms. What is the difference in the mass of Mars and Mercury?</p> $6.42 \times 10^{23} - 3.3 \times 10^{23}$ $\begin{array}{r} 6.42 \\ -3.3 \\ \hline 3.12 \end{array}$ 3.12×10^{23}
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<p>15. A scientist estimates that there are about 5.2×10^4 bacteria growing in each of 20 petri dishes. About how many bacteria in total are growing in the petri dishes?</p> $5.2 \times 10^4 \times 20$ $\begin{array}{r} 5.2 \\ 20 \\ \hline 104 \end{array}$ 104×10^4 1.04×10^6	<p>16. The total consumption of fruit juice in a particular country in 2006 was about 2.28×10^9 gallons. The population of that country that year was 3×10^8. What was the average number of gallons consumed per person?</p> $\frac{2.28 \times 10^9}{3 \times 10^8}$ $3 \overline{) 2.28}$ $\begin{array}{r} 76 \\ 3 \overline{) 2.28} \\ -21 \\ \hline 18 \end{array}$ $.76 \times 10^1 = 7.6 \times 10^0 = 7.6 \text{ gallons}$
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Mental Math: Solve each problem mentally and explain your reasoning.

<p>17.</p> $504 \times 7 = 3528$ $\begin{array}{r} 500 \times 7 = 3500 \\ 4 \times 7 = 28 \\ \hline \end{array}$ <p>Then add $3500 + 28$</p>	<p>18.</p> $\frac{3}{4} \text{ of } 80 = 60$ $\frac{1}{4} \text{ of } 80 \text{ is } 20$ $20 \times 3 = 60$
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