Name:	Date:	HW # 4 Quotient Rule

Simplify each of the following. is starred answer

1)
$$\frac{5^4}{5}$$
 $\frac{5^{4-1}}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$

2)
$$\frac{2^4}{2^2}$$
 2^{4-2} $\sqrt{2^2}$ $\sqrt{2^2}$ $\sqrt{2^2}$ $\sqrt{2^2}$ $\sqrt{2^2}$ $\sqrt{2^2}$ $\sqrt{2^2}$ $\sqrt{2^2}$ $\sqrt{2^2}$ $\sqrt{2^2}$

3)
$$\frac{8x^3}{2x^2} = \frac{8}{2} \times 3^{-2}$$

$$\frac{4}{4} \times 1$$

$$\frac{16m^{5}}{32m^{2}}$$

$$\frac{16}{32}m^{5-2}$$

$$\frac{1}{2}m^{3} \text{ or } \frac{m^{3}}{3}$$

$$\frac{3^{4} x^{8}}{3x^{4}} \quad 3^{4-1} \times 8^{-4}$$
5)
$$3^{3} \times 4 \quad 27 \times 4$$

6)
$$\frac{6 \times 10^4}{3 \times 10^3}$$
 $\frac{6}{3}$, 10^{4-3} $\frac{4}{3}$ $2 \cdot 10$ or 20

7)
$$\frac{10x^{6}y^{10}}{5x^{2}y^{7}}$$

10 $x^{6-2}y^{10-7}$

2 $x^{4-3}y^{3}$

8)
$$\frac{3}{2f}$$

$$\frac{6}{2}f^{10-1}$$

$$\frac{3}{3}f^{9}$$

9)
$$\frac{2x^4y^5}{10x^3}$$
 $\frac{2}{10} \times 4^{-3}y^5$ $\frac{4}{5}$ $\frac{1}{5} \times y^5$ or $\frac{xy^5}{5}$

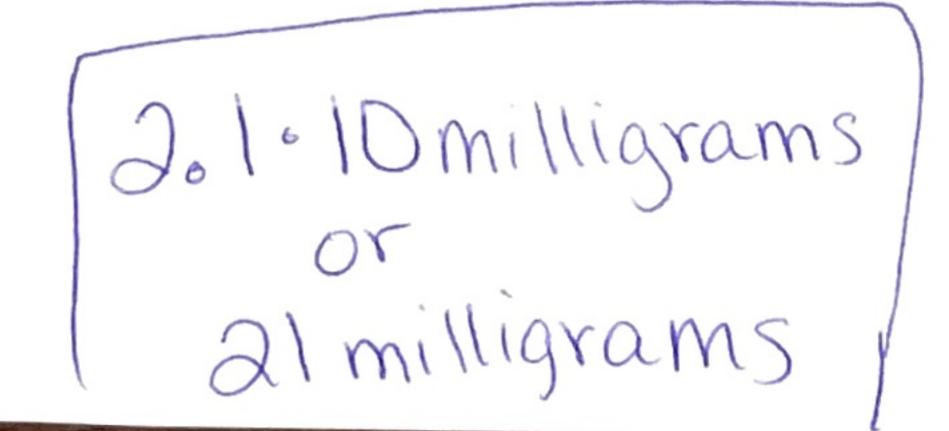
$$10) \frac{4^{5}a^{2}b^{7}}{4^{3}b^{4}} + 4^{5-3}a^{2}b^{7-4}$$

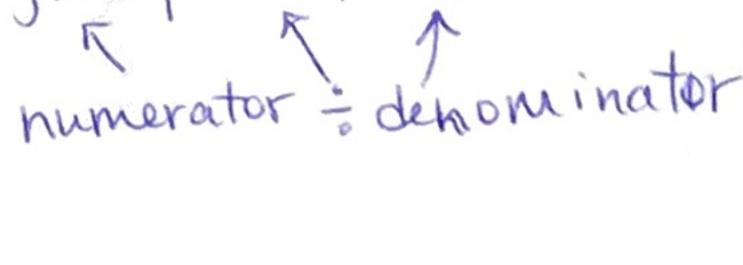
$$4^{2}a^{2}b^{3} \text{ or } 16a^{2}b^{3}$$

Write all answers in both scientific notation and standard form.

Be careful that you think about if you should divide and how to say the ratio. Not all of them are division!

11. A blue whale can eat 3×10^8 krill in a day. The total weight of all that krill is approximately 6.3×10^9 milligrams. About how much does a single krill weigh? Need Weight per Krill





distance = rate otime

12. Light travels at 6.71×10^8 miles per hour. The sun is 9.296×10^7 miles away from the earth. How long does it take light to travel from the sun to the earth? hould know from previous science classes $d = r \cdot t$ 80 t = d 9.296×10^{7} 6.71×10^{8} 4.296 0107-8 ~ 1.39.10 hours or 0.139 hours 2 8 minutes 13. Silver Dollar City had $2.42 \cdot 10^5$ people visit on Thanksgiving Day of 2015. On the same day of 2016 they had $2.53 \cdot 10^6$ people visit. How many more visitors did Silver Dollar City have in 2016? Subtract $2.53 \cdot 10^6 = 2530,000$ 2,288,000 more visitors 2.2880106 14. Visible light waves have a frequency of 3×10^{15} . Radio waves have a frequency of 3×10^9 (How many times bigger is a visible light wave than a radio wave? radio = Visible 3.10's radio = Vadio 3.109 15. A computer can perform 4.66×10^8 calculations per second. In 2011, we had calculated 1×10^{12} digits of pi. How long did it take the computer to come up with those digits?