

Hw  
Due  
Monday  
2-13

Name \_\_\_\_\_ Date \_\_\_\_\_ Class \_\_\_\_\_

TEKS A.11.A



LESSON

7-3

## Practice B

### Multiplication Properties of Exponents

Simplify.

1.  $3^4 \cdot 3^2$

2.  $2^5 \cdot 2^4$

3.  $2^3 \cdot 2^5 \cdot 2^1$

4.  $q^{-6} \cdot q^{-1}$

5.  $r^{-3} \cdot r^4 \cdot s^{-4}$

6.  $j^{-2} \cdot j^{-4} \cdot j^2$

7.  $c^5 \cdot b^{-2} \cdot c^3$

8.  $(h^2)^5$

9.  $(g^4)^{-2}$

10.  $(w^6)^0$

11.  $(v^2)^5 \cdot v^4$

12.  $(w^5)^{-2} \cdot w^{-3}$

13.  $(f^6)^{-4} \cdot (f^{-2})^{-3}$

14.  $(a^{-2})^{-3} \cdot (a^5)^2$

15.  $(3b)^4$

16.  $(-5k)^2$

17.  $-(4m)^3$

18.  $(-3p)^{-2}$

19.  $(s^4 t)^3 \cdot (s^4 t^3)^2$

20.  $(a^2 b^4)^2 \cdot (a^{-2} b^3)^{-1} \cdot a^4$

21.  $(x^3 y^2)^{-4} \cdot (x^2 y^{-3})^{-2}$

22. The pitch of a sound is determined by the number of vibrations produced per second. The note "middle C" produces  $2.62 \times 10^2$  vibrations per second. If a pianist plays middle C for  $5 \times 10^{-1}$  seconds, how many vibrations will occur?

**Practice B****Division Properties of Exponents****Simplify.**

1.  $\frac{6^7}{6^5} = 6^{7-5} = 6^{\square} =$  \_\_\_\_\_

2.  $\frac{t^{12}}{t^7} = t^{\square} - \square =$  \_\_\_\_\_

3.  $\frac{w^9}{w^2}$

4.  $\frac{j^2}{j^8}$

5.  $\frac{20m^5}{4m^2}$

6.  $\frac{c^3 d^2}{c^2 d^5}$

7.  $\frac{(x^4)^2}{(x^3)^5}$

8.  $\left(\frac{s^3 t}{st^4}\right)^2$

9.  $\left(\frac{2}{3}\right)^{-3}$

10.  $\left(\frac{3a}{2b}\right)^{-4}$

11.  $-\left(\frac{-t}{3v}\right)^{-4}$

12.  $\left(\frac{6}{7}\right)^{-2} \cdot \left(\frac{4s}{6t}\right)^{-2}$

13.  $\left(\frac{3c}{-2}\right)^{-1} \left(\frac{d}{4}\right)^{-2}$

14.  $\left(\left(\frac{3mn}{2}\right)^{-1}\right)^{-4}$

**Simplify. Write the answer in scientific notation.**

15.  $(3.8 \times 10^5) \div (1.9 \times 10^{-6})$

16.  $(2.5 \times 10^3) \div (5 \times 10^{-4})$

17. A textile factory produces  $1.08 \times 10^8$  yards of fabric every year. If the factory is in operation 360 days a year, what is the average number of yards of fabric produced each day? Give your answer in standard form.

18. It takes 5 yards of fabric to manufacture a dress. If the textile factory turned their entire yearly production of  $1.08 \times 10^8$  yards of fabric into dresses, how many could they make? Give your answer in scientific notation.