

**LESSON**  
**7-4**

**Practice B**  
**Division Properties of Exponents**

**Simplify.**

1.  $\frac{6^7}{6^5} = 6^{7-5} = 6^{\square} = \underline{\hspace{2cm}}$

2.  $\frac{t^{12}}{t^7} = t^{\square - \square} = \underline{\hspace{2cm}}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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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.  

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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.  

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**LESSON**  
**7-4**

**Practice C**

*Division Properties of Exponents*

**Simplify.**

1.  $\frac{6^8}{6^6}$

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2.  $\frac{h^4}{h^{-3}}$

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3.  $\frac{2^3 \cdot 4^3 \cdot 5}{5^2 \cdot 2^4}$

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4.  $\frac{x^5 y^2}{xy^3}$

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5.  $\frac{m^3 n^6}{m^4 n^4 p^8}$

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

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7.  $\left(\frac{4}{7}\right)^{-2}$

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

\_\_\_\_\_

9.  $-\left(\frac{ab}{6c}\right)^5$

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

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11.  $\left(\frac{xyz^2}{-w}\right)^5$

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12.  $\left(\frac{10^3 \cdot 10^2}{10^{-6}}\right)^{-4}$

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

13.  $(6.4 \times 10^7) \div (1.6 \times 10^3)$

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14.  $(8.1 \times 10^{-6}) \div (9 \times 10^{-15})$

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15.  $(2.8 \times 10^2) \div (7 \times 10^{-9})$

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16.  $(4.8 \times 10^5) \div (6 \times 10^{-13})$

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**Find the missing exponent in each equation.**

17.  $\left(\frac{c \square}{d}\right)^{-2} = \frac{d^2}{c^8}$

18.  $\frac{b^{14}}{b \square} = b^7$

19.  $\left(\frac{s^{-3}}{t^4}\right)^\square = s^9 t^{12}$

20. An actor was paid  $\$2.1 \times 10^6$  to star in a movie. If the movie was 1 hr 45 min long, what was the actor's salary per minute? Give your answer standard form.

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