

Name _____

Date _____ Pd. _____

Notes: Dividing Monomials

Quotient of Powers	For all integers m and n and any nonzero number a , $\frac{a^m}{a^n} =$
Power of a Quotient	For any integer m and any real numbers a and b , $b \neq 0$, $\left(\frac{a}{b}\right)^m =$

Zero Exponent	For any nonzero number a , $a^0 =$
Negative Exponent Property	For any nonzero number a and any integer n , $a^{-n} =$ and $\frac{1}{a^{-n}} =$

Example 1 Simplify $\frac{a^4b^7}{ab^2}$. Assume neither a nor b is equal to zero.

Example 2 Simplify $\left(\frac{2a^3b^5}{3b^2}\right)^3$. Assume that b is not equal to zero.

Example Simplify $\frac{4a^{-3}b^6}{16a^2b^6c^{-5}}$. Assume that the denominator is not equal to zero.

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Exit Card: Dividing Monomials

$$\frac{5x^6y^2}{10x^2y^8} =$$

F. $\frac{x^4}{2y^6}$

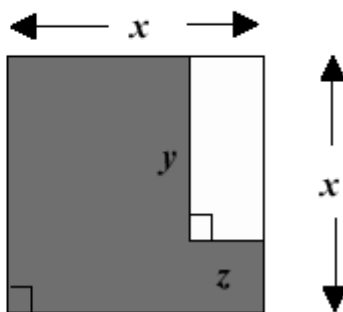
G. $\frac{x^4}{5y^6}$

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

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

BCR

Look at the figure below:



- Write a polynomial that represents the area of the shaded region. Use mathematics to explain how you determined your answer. Use words, symbols, or both in your explanation.


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Homework: Pages 421 – 423 (15 – 21 odd, 38, 40 – 42, 52, 53, 59)

15. Simplify $\frac{3^{13}}{3^7}$.	17. Simplify $\frac{y^3z^9}{yz^2}$
19. Simplify $\left(\frac{3m^7}{4x^5y^3}\right)^4$	21. Simplify $\frac{15b}{45b^5}$

38. The area of the rectangle is $24x^5y^3$ square units. Find the length of the rectangle.



$8x^3y^2$

The intensity of sound can be measured in watts per square meter. The table below gives the watts per square meter for some common sounds.

Watts/Square Meter	Common Sounds	Watts/Square Meter	Common Sounds
10^2	Jet plane	10^1	Pain level
10^0	Amplified music	10^{-2}	Noisy kitchen
10^{-3}	Heavy traffic	10^{-6}	Normal conversation
10^{-7}	Average home	10^{-9}	Soft whisper
10^{-12}	Barely audible		

40. How many times more intense is the sound from heavy traffic than the sound from normal conversation?

Use table on the other side

41. What sound is 10,000 times as loud as a noisy kitchen?

42. How does the intensity of a whisper compare to that of normal conversation?

52. What is the value of $\frac{(2^2)(2^3)}{(2^{-2})(2^{-3})}$?

A 2^{10}

B 2^{12}

C -1

D $\frac{1}{2}$

53. Write a convincing argument to show why $3^0 = 1$ using the following pattern.
 $3^5 = 243, 3^4 = 81, 3^3 = 27, 3^2 = 9, \dots$

59. Simplify $(-3ab)^3(2b^3)^2$