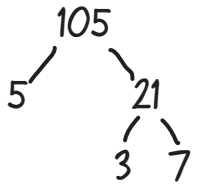
NAME _____ **DATE** _____

Prime Factorization

1 Show the prime factorization for each number. Then use the prime factors to help determine *all* the factors of that number.

Number	Prime Factorization	*All* the Factors (Thinking of Factor Pairs)
ex 105		1, 105 3, 35 5, 21 7, 15
a 18		
b 45		
c 72		

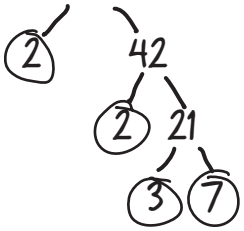
2 What factors do 18, 45, and 72 have in common?

3 What is the *greatest* factor that 18, 45, and 72 have in common?

NAME _____ **DATE** _____

More Prime Factorization

1 Use a factor tree to find the prime factorization of each number below.

ex 84  $84 = 2 \times 2 \times 3 \times 7$	**a** 96	**b** 72

2 Use the prime factors above to complete the sentences below. Fill in the circle or circles for each one.

a 12 is a factor of: ◯ 84 ◯ 96 ◯ 72

b 4 is a factor of: ◯ 84 ◯ 96 ◯ 72

c 8 is a factor of: ◯ 84 ◯ 96 ◯ 72

d 24 is a factor of: ◯ 84 ◯ 96 ◯ 72

3a If you know that 12 is a factor of a certain number, what else must be true about that number?

◯ It is prime.
◯ It is greater than 40.
◯ It is even.
◯ It is divisible by 9.

b Explain your answer to part a.

4 If you know that 10 is a factor of a certain number, what other numbers can you be certain are also factors of that number?

NAME _____ **DATE** _____

Division, Multiplication & Prime Factorization

1 Complete the division table below.

÷	14	63	42	35	56	49	28	21
7	2							

2 Solve each problem below using the partial products method.

example

63
× 21

20 × 60 = 1,200
20 × 3 = 60
1 × 60 = 60
1 × 3 = + 3
1,323

a

36
× 27

b

44
× 37

c

59
× 64

CHALLENGE

3 What is the greatest factor of 96 (that is not 96 itself)?