Lesson 1.7 Greatest Common Factor

A **factor** is a divisor of a number. (For example, 3 and 4 are both factors of 12.) A **common factor** is a divisor that is shared by two or more numbers (1, 2, 4, and 8). The **greatest common factor** is the largest common factor shared by the numbers (8).

To find the greatest common factor of 32 and 40, list all of the factors of each.

$$32 \begin{cases} 1 \times 32 \\ 2 \times 16 \\ 4 \times 8 \end{cases} \text{1, 2, 4, 8, 16, and 32}$$

$$40 \begin{cases} 1 \times 40 \\ 2 \times 20 \\ 4 \times 10 \\ 5 \times 8 \end{cases} \text{1, 2, 4, 5, 8, 10, 20, and 40}$$

The greatest common factor is 8.

List the factors of each number below. Then, list the common factors and the greatest common factor.

Factors	Common Factors	Greatest Common Factor
1. 8 _____	_____	_____
12 _____		
2. 6 _____	_____	_____
18 _____		
3. 24 _____	_____	_____
15 _____		
4. 4 _____	_____	_____
6 _____		
5. 5 _____	_____	_____
12 _____		
6. 16 _____	_____	_____
12 _____		

Lesson 1.7 Greatest Common Factor

Find the greatest common factor for each set of numbers.

	a		**b**	
1.	7 and 3	_____	15 and 18	_____
2.	14 and 42	_____	27 and 18	_____
3.	36 and 24	_____	45 and 20	_____
4.	72 and 54	_____	42 and 49	_____
5.	86 and 94	_____	66 and 11	_____
6.	52 and 26	_____	12 and 40	_____
7.	9, 12, and 21	_____	16, 32, and 64	_____
8.	15, 25, and 40	_____	27, 36, and 72	_____

Lesson 1.8 Least Common Multiple

Find the least common multiple by listing multiples of each number until finding the first one that is shared.

$\left.\begin{array}{l} 8 - 8, 16, 24 \\ \\ 12 - 12, 24 \end{array}\right\}$ The Least Common Multiple is 24.

Find the least common multiple for each set of numbers.

	a		**b**	
1.	51 and 18	_____	104 and 76	_____
2.	54 and 64	_____	20 and 26	_____
3.	78 and 110	_____	42 and 63	_____
4.	23 and 92	_____	75 and 15	_____
5.	28 and 32	_____	12 and 16	_____
6.	9, 45, and 81	_____	21, 45, and 6	_____
7.	17, 24, and 53	_____	86, 68, and 20	_____

Lesson 1.8 Least Common Multiple

Find the least common multiple for each set of numbers.

	a		**b**	
1.	10 and 13	_____	23 and 35	_____
2.	45 and 59	_____	41 and 55	_____
3.	68 and 71	_____	63 and 76	_____
4.	28 and 35	_____	40 and 50	_____
5.	33 and 44	_____	27 and 45	_____
6.	6, 76, and 18	_____	4, 24, and 21	_____
7.	5, 25, and 65	_____	7, 99, and 49	_____
8.	3, 27, and 45	_____	8, 72, and 216	_____