

Mathematics HCF / GCF Highest/Greatest Common Factor

Vocabulary: factor divide list common highest/ greatest

Numbers that a number can be divided by evenly are the factors of that number.

Let's list factors of 6 (1, 2, 3, 6)

Multiple	List of Factors
8	1 2 4 8
81	1 3 9 27 81
10	1 2 5 10
49	1 7 49
63	1 3 7 9 21 63

We use factors to make equivalent fractions or to reduce fractions to their lowest terms.

Factors of numerator and denominator then divide by the HCF

15 - 1, 3, 5, 15

18 - 1, 2, 3, 6, 9, 18

$$\frac{15}{18} \div \frac{3}{3} = \frac{5}{6}$$

Factors

8 - 1, 2, 4, 8

24 - 1 2 3 4 6 8 12 24

$$\frac{8}{24} \div \frac{8}{8} = \frac{1}{3}$$

Reduce these fractions to their lowest/simplest terms.

$$\frac{12}{16}$$

Factors

12

16

Sandy has two pieces of cloth. One piece is 72 inches wide, and the other piece is 90 inches wide. She wants to cut both pieces into strips of equal width that are as wide as possible. How wide should she cut the strips?

72 1 2 3 6 12 8 9 24 36 17
90 1 2 3 5 9 10 18 30 45 9 in

Diego is catering a party and putting snack food on plates. He has 72 cheese puffs and 48 carrot sticks. He wants both kinds of food on each plate. He wants to distribute the food evenly and he doesn't want any left over. What is the largest number of plates he can use,? and how many of each type of food should he put on each plate?

48 1 2 3 4 6 8 12 16 24 48 24 plates

72 1 2 3 4 6 8 9 12 18 24 36 72

Shelly is putting beans in little boxes. She has 81 black beans, 54 lima beans, and 45 kidney beans. How many boxes will she need? How many of each bean will be in each box?

All that is asking for is: What is the GCF and how many times does it divide into each number?