

Greatest Common Factor

Using a Gradual Method

Example: You can gradually get to the G.C.F. gradually by first dividing using smaller factors.

- a) $\begin{array}{r} \underline{24, 42} \end{array}$ 1) Ask yourself, what number can fit into the two numbers given?
- b) $2 \begin{array}{r} \underline{24, 42} \end{array}$ 2) Because both numbers are even, we can start with two.
- c) $2 \begin{array}{r} \underline{24, 42} \\ 12, 21 \end{array}$ 3) Because 2 goes into 24 12 times, write 12 under 24. Because 2 goes into 42 21 times, write 21 under 42.
- d) $2 \begin{array}{r} \underline{24, 42} \\ 12, 21 \\ \underline{3 12, 21} \\ 4, 7 \end{array}$ 4) Can any factor evenly fit into the two new numbers you have? YES! Three can fit into 12 and 21 so make another bracket and divide. Write the results at the bottom(4 and 7)
- e) G.C.F.= 6 5) The resulting numbers, 4 and seven share no more common factors besides one. If that is true than you must stop. Multiply all of the numbers you wrote on the left side. $2 \times 3 = 6$ **The G.C.F. = 6**

1) 14, 64

$gcf = 2$

2) 36, 93

$gcf = 3$

3) 24, 72

$gcf = 24$

4) 16, 48

$gcf = 16$

5) 25, 125

$gcf = 25$

6) 44, 99

$gcf = 11$

7) 42, 75

$gcf = 3$

8) 32, 68

$gcf = 4$

9) 40, 120

$gcf = 40$

10) 15, 60

$gcf = 15$

11) 13, 39

$gcf = 13$

12) 27, 132

$gcf = 3$

13) 45, 60

$gcf = 15$

14) 16, 48

$gcf = 16$

15) 55, 150

$gcf = 5$

16) 24, 84

$gcf = 12$

17) 26, 46

$gcf = 2$

18) 24, 140

$gcf = 4$

19) 36, 54

$gcf = 18$

20) 62, 100

$gcf = 2$