

Name Stew Dent

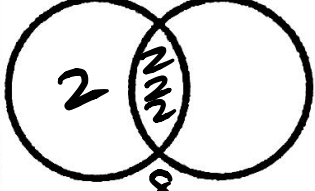
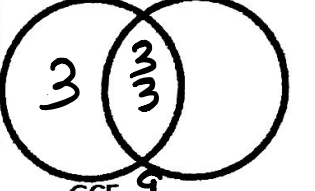
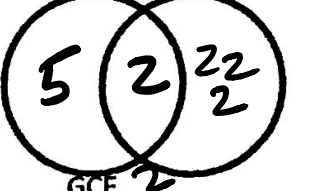
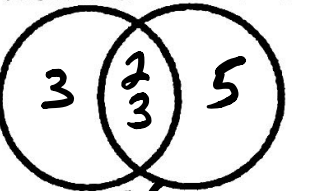
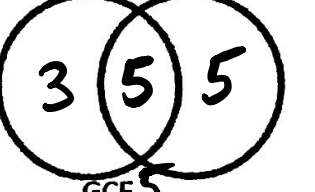
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Factor Trees, GCF, and LCM

Directions: Find the prime factors of each number, and then fill in the Venn diagram to compare and contrast the prime factors of both numbers. Finally, write the Greatest Common Factor (GCF) of the numbers by multiplying the common prime factors and the Least Common Multiple (LCM) by multiplying all the prime factors in the Venn diagram.

Numbers	Factor Trees	Factor Trees	Venn Diagram
Example: 12 and 20	$ \begin{array}{c} 12 \\ \swarrow \searrow \\ 2 \times 6 \\ \swarrow \searrow \\ 2 \times 3 \\ 2 \times 2 \times 3 \end{array} $	$ \begin{array}{c} 20 \\ \swarrow \searrow \\ 4 \times 5 \\ \swarrow \searrow \\ 2 \times 2 \end{array} $ $2 \times 2 \times 5$	<p>Prime Factors of 12: 2, 2, 3 Prime Factors of 20: 2, 2, 5 GCF: 4 LCM: 60</p>
20 and 28	$ \begin{array}{c} 20 \\ \swarrow \searrow \\ 2 \times 10 \\ \swarrow \searrow \\ 2 \times 5 \end{array} $ $2 \cdot 2 \cdot 5$	$ \begin{array}{c} 28 \\ \swarrow \searrow \\ 7 \times 4 \\ \swarrow \searrow \\ 2 \times 2 \end{array} $ $2 \cdot 2 \cdot 7$	<p>Prime Factors of 20: 2, 2, 5 Prime Factors of 28: 2, 2, 7 GCF: $2 \cdot 2 = 4$ LCM: $2 \cdot 2 \cdot 5 \cdot 7 = 140$</p>
32 and 40	$ \begin{array}{c} 32 \\ \swarrow \searrow \\ 4 \times 8 \\ \swarrow \searrow \swarrow \searrow \\ 2 \times 2 \times 2 \times 2 \end{array} $ $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$	$ \begin{array}{c} 40 \\ \swarrow \searrow \\ 4 \times 10 \\ \swarrow \searrow \swarrow \searrow \\ 2 \times 2 \times 2 \times 5 \end{array} $ $2 \cdot 2 \cdot 2 \cdot 5$	<p>Prime Factors of 32: 2, 2, 2, 2, 2 Prime Factors of 40: 2, 2, 2, 5 GCF: $2 \cdot 2 \cdot 2 = 8$ LCM: $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5 = 160$</p>
24 and 54	$ \begin{array}{c} 24 \\ \swarrow \searrow \\ 4 \times 6 \\ \swarrow \searrow \swarrow \searrow \\ 2 \times 2 \times 2 \times 3 \end{array} $ $2 \cdot 2 \cdot 2 \cdot 3$	$ \begin{array}{c} 54 \\ \swarrow \searrow \\ 6 \times 9 \\ \swarrow \searrow \swarrow \searrow \\ 2 \times 3 \times 3 \times 3 \end{array} $ $2 \cdot 3 \cdot 3 \cdot 3$	<p>Prime Factors of 24: 2, 2, 2, 3 Prime Factors of 54: 2, 3, 3, 3 GCF: $2 \cdot 3 = 6$ LCM: $2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 = 216$</p>

GCF: Multiply Common Prime Factors Only
LCM: Multiply ALL Prime Factors in Venn Diagram

Numbers	Factor Trees	Factor Trees	Venn Diagram
16 and 8	16 $\swarrow \searrow$ 2 8 $\swarrow \searrow$ 2 4 $\swarrow \searrow$ 2 2 $2 \cdot 2 \cdot 2 \cdot 2$	8 $\swarrow \searrow$ 2 4 $\swarrow \searrow$ 2 2 $2 \cdot 2 \cdot 2$	Prime Factors of 16 Prime Factors of 8  GCF <u>8</u> LCM <u>16</u>
27 and 9	27 $\swarrow \searrow$ 3 9 $\swarrow \searrow$ 3 3 $3 \cdot 3 \cdot 3$	9 $\swarrow \searrow$ 3 3 $3 \cdot 3$	Prime Factors of 27 Prime Factors of 9  GCF <u>9</u> LCM <u>27</u>
10 and 16	10 $\swarrow \searrow$ 2 5 $2 \cdot 5$	16 $\swarrow \searrow$ 4 4 $\swarrow \searrow \swarrow \searrow$ 2 2 2 2 $2 \cdot 2 \cdot 2 \cdot 2$	Prime Factors of 10 Prime Factors of 16  GCF <u>2</u> LCM <u>80</u>
18 and 30	18 $\swarrow \searrow$ 2 9 $\swarrow \searrow$ 3 3 $2 \cdot 3 \cdot 3$	30 $\swarrow \searrow$ 6 5 $\swarrow \searrow$ 2 3 $2 \cdot 3 \cdot 5$	Prime Factors of 18 Prime Factors of 30  GCF <u>6</u> LCM <u>90</u>
15 and 25	15 $\swarrow \searrow$ 3 5 $3 \cdot 5$	25 $\swarrow \searrow$ 5 5 $5 \cdot 5$	Prime Factors of 15 Prime Factors of 25  GCF <u>5</u> LCM <u>75</u>