

3A.3 Learning Opportunity

GCF and LCM (the hard way), and prime factorization (decomposition)



Name: _____

- 1) Use UT models to identify all factors of 8 and 14. Then, identify the greatest common factor (GCF) of 8 and 14.



List multiples of 8 and 14 until you identify the LCM.

multiples of 8:

multiples of 14:

LCM = _____

Express the prime decomposition of 8 and 14 in expanded and exponential forms.

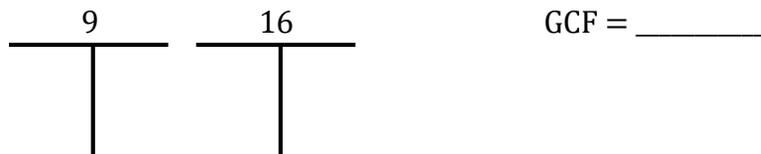
8 prime decomposition (expanded):

8 prime decomposition (exponential):

14 prime decomposition (expanded):

14 prime decomposition (exponential):

- 2) Use UT models to identify all factors of 9 and 16. Then, identify the greatest common factor (GCF) of 9 and 16.



List multiples of 9 and 16 until you identify the LCM.

multiples of 9:

multiples of 16:

LCM = _____

Express the prime decomposition of 9 and 16 in expanded and exponential forms.

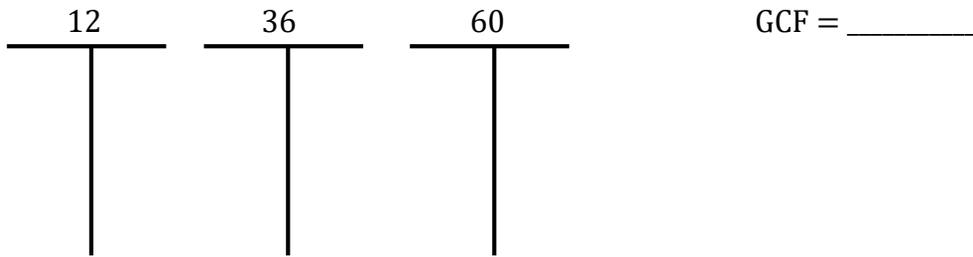
9 prime decomposition (expanded):

9 prime decomposition (exponential):

16 prime decomposition (expanded):

16 prime decomposition (exponential):

- 3) Use UT models to identify all factors of 12, 36, and 60. Then, identify the greatest common factor (GCF) of 12, 36, and 60.



List multiples of 12, 36, and 60 until you identify the LCM.

multiples of 12:

multiples of 36:

multiples of 60:

LCM = _____

Express the prime decomposition of 12, 36, and 60 in expanded and exponential forms.

12 prime decomposition (expanded):

12 prime decomposition (exponential):

36 prime decomposition (expanded):

36 prime decomposition (exponential):

60 prime decomposition (expanded):

60 prime decomposition (exponential):

- 4) **Challenge:** Identify some whole numbers that have an odd number of factors. (Example: 10 would not work because it has 4 factors: 1, 2, 5, and 10). What is special about all of the whole numbers with an odd number of factors?