13. (a) \[4\text{ pts}\] Use the listing method to find the GCD of 60 and 48. Briefly explain your work in 1-2 sentences.

List the divisors of 60: 1, 2, 3, 4, 5, 6, 10, 12, 15, 30, 60
and those of 48: 1, 2, 3, 4, 6, 8, 12, 24, 48.
The biggest divisor that they share is \[12\].

(b) \[4\text{ pts}\] Use the listing method to find the LCM of these two numbers. Briefly explain your work in 1-2 sentences.

List the multiples of 60: 60, 120, 180, 240, 300, ...
and those of 48: 48, 96, 144, 192, 240, ...
The first one they share is \[240\].

14. \[6\text{ pts}\] Find both the GCD and the LCM of 452 and 936, telling which is which. Show clear work, but you need not explain.

\[
\begin{align*}
\text{GCD} & = 4 \\
\text{LCM} & = \frac{452 \cdot 936}{4}
\end{align*}
\]

15. \[6\text{ pts}\] Find a 5-digit number that would have exactly 12 divisors. Briefly explain your work.

It could have:
2 steps on 1 prime factor
1 " " another.
\[31 \cdot 5^5, 43 \cdot 3^5, \text{ etc.}\]
It could have:
3 steps on 1 prime factor
4 " " another.
\[2^2 \cdot 17^3, 3^2 \cdot 11^3, \text{ etc.}\]

16. (a) \[2\text{ pts}\] Correctly spell the name of our modern system of numeration.

Hindu-Arabic

(b) \[2\text{ pts}\] Clearly state the Fundamental Theorem of Arithmetic.

Every composite number has a unique prime factorization.