

Decide whether each of the following is true without using a calculator or long division (all numbers on this quiz are natural numbers, unless otherwise stated):

1. If a natural number is divisible by 4 and by 14, it is divisible by 56.
2. $40|5!$
3. 576 is prime.
4. $a^m b^n | a^p b^m$ if $m < n < p$.
5. $a^m b^n | a^n b^p$ if $m < n < p$.
6. If $3|b$ and $4|b$, then $12|b$.
7. If $12|ab$, then $12|a$ or $12|b$.
8. The prime factorization of 234,547,84 includes 2 three times.
9. 9 is a factor of 243,912 is divisible by 9.
10. If $5|b$ and $7|b$, then $35|b$.