

Competitive Math Assessment - Factorization Practice Quiz #2

Here are some suggestions for how to practice replicating testing conditions:

- Make sure you have a quiet place to practice on your own for an extended period of time. This will help model the actual experience of a competition. When you have finished the quiz, check your solutions using the online Brilliant quiz.
- Set a timer, or at least keep an eye on the clock to learn your own pace. If you want to set a specific time goal, math competitions provide an average of about 2 minutes per problem, so you should give yourself 30-40 minutes to complete these problems. Keep in mind that the general difficulty of problems increases as you move forward.
- Some competitions allow students to use calculators while others do not. We encourage you to use a calculator only for the most in-depth calculations on this practice quiz.

1	How many factors does 1,000,000,000 have?
2	Find the value of E .
3	$\frac{E}{3} \frac{E}{E}$ Evaluate $\frac{16!}{11!8!}$
4	How many odd factors does 1260 have?

5	How many nu divisible by 6		and 1000 inclusive are	
6		l gcd (x , 270) is a pole value of x ?	erfect square, what is t	he
7	Evaluate			
		<u>9!+</u> 7!+6	<u>81</u> -	
8	_ What is the p	What is the product of all the factors of 126?		
	A . 126 ³		B. 126 ⁶	
	C. 126 ⁹		D. 126 ¹²	
9		If each letter represents a different integer, find the value of the 2-digit integer QR .		
		×	$\begin{array}{ccc} 5 & P \\ Q & R \end{array}$	
			8 0 0	
10	What is the la exactly 4 fact	-	uch that $x < 200$ and x	has

11	Miranda is an avid collector of stamps. She is trying to arrange her collection of stamps into neat rows. She found that when she arranged them in rows of 2, 3, 4, 5, 6, or 7, she always came up 1 short. What is the minimum number of stamps that Miranda has?		
	A . 319	B. 359	
	C. 419	D. 719	
12	How many positive integers a are the divided by a leaves a remainder of 73		
13	What is the largest perfect cube that i	s a factor of 10!?	
14	If each letter represents a different dig value of L .	git from 1 to 9, find the $ \begin{array}{c} 3 L \\ \underline{M M} \\ 6 4 \end{array} $	
15	How many ordered pairs of positive ir	ntegers (m, n) satisfy	

$$gcd(m^3, n^2) = 2^2 \cdot 3^2$$

and

lcm
$$(m^2, n^3) = 2^4 \cdot 3^4 \cdot 5^6$$
 ?