1. The sum of the digits of x is equal to 21.Which of the following can be true about x?
2. x is a 2 digit number
3. x is a 3 digit number
4. x is divisible by 3
5. x is an odd number
6. x is an even number
7. x is divisible by 9
8. x is prime
9. The sum of the digits of x is equal to 21.Which of the following must be true about x?
10. x is a 2 digit number
11. x is a 3 digit number
12. x is divisible by 3
13. x is an odd number
14. x is an even number
15. x is divisible by 9
16. The prime factorization of a number is 3 and 5. What is the number and what are all of its factors? [15][1, 3, 5, 15]
17. Find all integers between 1 and 900, which has exactly 3 factors? [10 integers, All primes less than 30]
18. The prime factorization of a number is 3, 5 and 7. What is the number and what are all of its factors? [105][1, 3, 5, 7, 15, 21, 35, 105]
19. If k is an integer and k=462/n, then what is the largest value of n? [462]
20. If a,b,c and d are different integers between -6 and 10 inclusive, what is the least possible value of the product abcd? [-4320]
21. If then which of the following must be true? Indicate all possible answers.
22. n + 19 is divisible by 19 [No]
23. n is divisible by 39 [Yes]
24. **Column A:** The number of prime numbers divisible by 13  
     **Column B:** The number of prime numbers divisible by 2

**[Both are equal]**

1. If a and b are integers and [http://math.edim.co/41f28c9ac44a69c6c6f2c513fc1c33f1.png](http://math.edim.co/41f28c9ac44a69c6c6f2c513fc1c33f1.png), then a + b could equal
   1. 2
   2. 3
   3. 4
   4. 5
   5. 6
2. Given that x is divisible by 6. Which of the following must be true. Indicate all that are true.
3. x is even
4. x is divisible by 3
5. x is divisible by 12
6. Given that x is divisible by 24. Which of the following must be true. Indicate all that are true.
7. x is divisible by 6
8. x is divisible by 9
9. x is divisible by 8
10. Given that x is divisible by 3 and 10. Which of the following must be true. Indicate all that are true.
11. x is divisible by 2
12. x is divisible by 15
13. x is divisible by 45
14. **Column A:** The number of distinct prime factors of 30

**Column B:** The number of distinct prime factors of 50

**[Column A is bigger]**

1. If ***a*** is divided by 7 or by 18, an integer results. Is ***a*/42** an integer? Yes
2. If 80 is a factor of ***r***, is 15 a factor of ***r***? CBD
3. Given that 7 is a factor of ***n*** and 7 is a factor of ***p***, is ***n* + *p*** divisible by 7? Yes
4. Given that 8 is not a factor of ***g***, is 8 a factor of **2*g***? CBD
5. If ***j*** is divisible by 12 and 10, is ***j*** divisible by 24? CBD
6. If 12 is a factor of **xyz**, is 12 a factor of **xy**? CBD
7. The greatest prime factor of 40,002 is x. The greatest prime factor of 80,004 is y  
   **Column A:** x  
   **Column B:** y

**[Both are equal]**

1. Given that 6 is a divisor of ***r*** and ***r*** is a factor of ***s***, is 6 a factor of ***s***? Yes
2. What is the largest number less than 600 than has the most number of prime factors? 512
3. If 24 is a factor of ***h*** and 28 is a factor of ***k***, must 21 be a factor of ***hk***? Yes
4. If 6 is not a factor of ***d***, is ***12d*** divisible by ***6***? Yes
5. If ***k*** is divisible by 6 and ***3k*** is not divisible by 5, is ***k*** divisible by 10? No
6. If ***k*** is divisible by 6 and ***5k*** is not divisible by 5, is ***k*** divisible by 10? Wrong Question
7. If 60 is a factor of ***u***, is 18 a factor of ***u***? CBD
8. Given that the LCM of x and 30 is 150, list all possible value of x 25, 50, 75, 150
9. Given that the LCM of x, y and 36 is 108, then
10. What is the largest possible value of x + y? 216
11. What is the largest possible value of x - y? 107
12. What is the smallest possible value of x + y? 28
13. What is the smallest possible value of x - y? -107
14. If ***s*** is a multiple of 12 and ***t*** is a multiple of 12, is ***7s + 5t*** a multiple of 12? Yes
15. What is the greatest common factor of 420 and 660? 60
16. What is the least common multiple of 18 and 24? 72
17. Given that x is a factor of 24 and y is a multiple of 2, then
18. What is the largest value of x+y? Undefined
19. What is the largest value of x-y? 24
20. What is the smallest value of x+y? 1
21. What is the smallest value of x-y? -Undefined
22. A skeet shooting competition awards prizes as follows: the first place winner receives 11 points, the second place winner receives 7 points, the third place finisher receives 5 points, and the fourth place finisher receives 2 points. No other prizes are awarded. John competes in the skeet shooting competition several times and receives points every time he competes. If the product of all of the paints he receives equals 84,700, how many times does he participate in the competition? 7
23. The greatest common factor of 16 and the positive integer n is 4. The greatest common factor of n and 45 is 3. Which of the following could be the greatest common factor of n and 210?
24. 3
25. 14
26. 30
27. 42
28. 70