

LCM and GCF Practice Problems

For all problems, you are expected to use the methods we have used in class, and you are expected to show your work.

Assume all letters represent counting numbers.

1. Name four pairs of numbers that have a GCF of 12.
2. Name four pairs of numbers that have a GCF of 20.
3. Name four pairs of numbers that have an LCM of 100.
4. Name four pairs of numbers that have an LCM of 210.
5. What pairs of numbers have a GCF of 5 and an LCM of 125? (List all of the possibilities.)
6. What pairs of numbers have a GCF of 15 and an LCM of 45? (List all of the possibilities.)
7. For the number $m = 2^{45} \cdot 5 \cdot 7 \cdot 7 \cdot p$ (where p is a prime number greater than 7), indicate whether the following statements are true or false:
 - a) m is odd
 - b) the last digit (on the right) of the number m is a 5
 - c) 14 is a factor of m
 - d) 4 is a factor of m
 - e) m is a multiple of 490
 - f) m is divisible by 25
8. If $\text{GCF}(x, 42) = 6$ and $\text{LCM}(x, 42) = 252$, find x .
9. If $\text{GCF}(x, 85) = 5$ and $\text{LCM}(x, 85) = 850$, find x .
10. If $\text{GCF}(x, 18) = 2$ and $\text{LCM}(x, 18) = 504$, find x .
11. State whether each statement is true or false:
 - a) If $\text{LCM}(x, y) = 16$, then y is a factor of 16.
 - b) If a and b are relatively prime, then $\text{GCF}(a, b) = ab$.
 - c) If $\text{GCF}(m, n) = 6$, then n is a factor of 6.
12. Evaluate:
 - a) $\text{GCF}(x, 3x) =$
 - b) $\text{LCM}(7b, b) =$

c) $\text{GCF}(2, 4a, 2(a+1))$

c) $\text{GCF}(a, 4a^2) =$

d) $\text{GCF}(2^{145}, 3^{580}) =$

13. Name two numbers between 50 and 100 that have a GCF of 9.

14. Name all the possible pairs of numbers that have an LCM of 110.

15. Name all the possible pairs of numbers that have an LCM of 121.

16. If the $\text{GCF}(x, 32) = 16$ and the $\text{LCM}(x, 32) = 96$, find x .

17. If the $\text{GCF}(m, 48) = 3$ and $\text{LCM}(m, 48) = 432$, find m .

18. If the GCF of two numbers is 8 and their LCM is 320, what could the numbers be? (List all the possibilities.)

19. State whether each statement is true or false:

a) If 6 is a factor of n and 4 is a factor of n , then 24 is a factor of n .

b) If $\text{LCM}(x, y) = 16$, then y is a factor of 16.

c) If a and b are relatively prime, then $\text{GCF}(a, b) = ab$.

d) If 2 is a factor of m and 3 is a factor of m , then 5 is a factor of m .

e) If $\text{GCF}(m, n) = 6$, then n is a factor of 6.

f) If 4 is a factor of n and 4 is a factor of m and 4 is a factor of w , then 2 is a factor of $(n + m + w)$.

20. If $n = 3 \cdot 3 \cdot 5 \cdot 23 \cdot p$, where p is a prime number greater than 7, then

a) The last digit of n is a zero.

b) 9 is a factor of n

c) n is a multiple of 46

d) n is a factor of $3p$.

21. Find the following answers, using the technique we learned in class:

a) $\text{GCF}(750, 1950)$

b) $\text{GCF}(1650, 330)$

c) $\text{GCF}(315, 490)$

d) $\text{GCF}(70, 99)$

22. Name three pairs of numbers between 40 and 120 that have a GCF of 9.

23. Name three pairs of numbers between 10 and 150 that have an LCM of 144.
24. Name three pairs of numbers that are not divisible by 7 and that have a GCF of 4.
25. Name three pairs of odd numbers that have a GCF of 15.
26. Find two numbers that have a GCF of 25 and an LCM of 300. List all the possibilities.
27. Find two numbers that have a GCF of 12 and an LCM of 120. List all the possibilities.
28. Find two numbers that have a GCF of 20 and an LCM of 280. List all the possibilities.
29. If $\text{GCF}(x, 81) = 9$ and $\text{LCM}(x, 81) = 567$, what is x ?
30. If $\text{GCF}(x, 70) = 14$ and $\text{LCM}(x, 70) = 140$, what is x ?
31. If $\text{GCF}(x, 42) = 6$ and $\text{LCM}(x, 42) = 252$, what is x ?
32. GCF (330, 1050)
33. LCM (525, 693)
34. GCF (12, 20)
35. LCM (12, 36)
36. GCF (100, 80)
37. GCF (25, 75)
38. LCM (11, 23)
39. GCF (31, 43)
40. If $8|m$, what else must divide m ?
41. True or false: If 3 is a factor of x and 2 is a factor of x , then 6 is a factor of x .
42. True or false: If 4 is a factor of d and 6 is a factor of d , then 24 is a factor of d .
43. If a and b are relatively prime, what is $\text{GCF}(a, b)$?
44. If a and b are relatively prime, what is $\text{LCM}(a, b)$?
45. If a is a factor of b , what is $\text{GCF}(a, b)$?
46. If a is a factor of b , what is $\text{LCM}(a, b)$?