Name _____ Date _____

1.3 Lowest common multiples — worksheet

Find out about lowest common multiples. · 56 questions · Show your working.

Remember

- The **multiples** of a number are its times table: multiples of 4 are 4, 8, 12, 16, 20, ...
- A **common multiple** of two numbers appears in both times tables.
- The **lowest common multiple (LCM)** is the smallest of those common multiples.
- Method: list the multiples of the **larger** number and stop at the first one that the smaller number divides into.
- If two numbers share no factors, LCM = a × b, e.g. LCM(5, 8) = 40.
- If one number is a multiple of the other, the LCM is the larger number, e.g. LCM(4, 12) = 12.

A · Fluency — Find the LCM of pairs and triples.

1 Find the lowest common multiple of 4 and 6.

2 Find the lowest common multiple of 5 and 8.

3 Find the lowest common multiple of 9 and 12.

4 Find the lowest common multiple of 10 and 15.

5 Find the lowest common multiple of 6 and 7.

6 Find the lowest common multiple of 8 and 12.

7 Find the lowest common multiple of 14 and 21.

8 Find the lowest common multiple of 6 and 10.

9 Find the lowest common multiple of 4 and 10.

10 Find the lowest common multiple of 12 and 18.

11 Find the lowest common multiple of 15 and 20.

12 Find the lowest common multiple of 9 and 15.

13 Find the lowest common multiple of 7 and 11.

14 Find the lowest common multiple of 16 and 24.

15 Find the lowest common multiple of 25 and 30.

16 Find the lowest common multiple of 18 and 27.

17 Find the lowest common multiple of 20 and 24.

18 Find the lowest common multiple of 8 and 20.

19 Find the lowest common multiple of 2, 3 and 4.

20 Find the lowest common multiple of 3, 4 and 5.

21 Find the lowest common multiple of 2, 6 and 9.

22 Find the lowest common multiple of 4, 6 and 8.

23 Find the lowest common multiple of 5, 6 and 10.

24 Find the lowest common multiple of 3, 5 and 9.

B · Reasoning — Multiples, common multiples and true/false.

25 Write the first five multiples of 7, separated by commas.

26 Write the first five multiples of 12, separated by commas.

27 Write all the multiples of 6 that are less than 40, separated by commas.

28 What is the smallest number that appears in both the 6 times table and the 8 times table?

29 Is 48 a common multiple of 6 and 8?

- ☐ Yes
- ☐ No

30 Is 30 a common multiple of 4 and 5?

- ☐ Yes
- ☐ No

31 Two numbers have no common factor except 1. What is their LCM?

- ☐ Their sum
- ☐ Their product
- ☐ The larger number
- ☐ 1

32 The LCM of 6 and n is 30. What is the largest possible value of n?

33 The LCM of 4 and n is 20, and n is not 20. What is n?

34 Marcus says “the LCM of two numbers is always bigger than both of them”. Is he right?

☐ Yes
☐ No

35 Find the lowest common multiple of 2, 3, 4, 5 and 6.

36 What is the smallest number greater than 1 that leaves a remainder of 1 when divided by 2, 3 and 4?

C · Challenge — Work backwards from an LCM.

37 The LCM of two numbers is 36 and one of the numbers is 12. What is the largest the other number could be?

38 Find the smallest number that is a multiple of 8 and also a multiple of 12, and is greater than 100.

39 How many common multiples of 6 and 9 are there below 200?

40 a and b are two different whole numbers between 1 and 10 inclusive. Their LCM is 24. What is the largest possible value of a + b?

41 Two cogs have 12 and 18 teeth. They start with two marked teeth touching. After how many teeth of the smaller cog do the marks touch again?

42 The LCM of 9 and n is 63. Find n if n is not 63.

43 Find the lowest common multiple of 15, 20 and 25.

44 A number leaves remainder 3 when divided by 5 and remainder 3 when divided by 7. What is the smallest such number greater than 3?

D · Word problems — Repeating events and packing problems.

45 One bus leaves the station every 12 minutes and another every 18 minutes. They leave together at 09:00. After how many minutes do they next leave together?

46 Two lighthouses flash every 20 seconds and every 25 seconds. They flash together now. After how many seconds do they next flash together?

47 Hot dogs come in packs of 10 and buns come in packs of 8. What is the smallest number of hot dogs you can buy so that none are left over?

48 Ali swims every 4 days and cycles every 6 days. He does both today. In how many days will he next do both on the same day?

49 A red light flashes every 6 seconds, a green light every 8 seconds and a blue light every 12 seconds. They all flash together now. After how many seconds do all three next flash together?

50 Tiles are 15 cm by 20 cm. What is the side length, in cm, of the smallest square that can be made from whole tiles?

51 Trains to the airport leave every 9 minutes and trains to the port leave every 15 minutes. Both leave at 06:00. At what time do they next leave together? Give the answer in minutes after 06:00.

52 Pencils come in boxes of 12 and erasers in boxes of 16. A teacher wants the same number of each. What is the smallest number of pencils she can buy?

53 A machine A is serviced every 30 days and machine B every 45 days. Both are serviced today. In how many days are they both serviced on the same day again?

54 Runner A completes a lap in 40 seconds and runner B in 60 seconds. They start together. After how many seconds are they side by side at the start line again?

55 Sweets are sold in bags of 14 and party bags need 21 sweets each. What is the smallest number of sweets that fills whole bags of both kinds?

56 Three friends visit a café: one every 2 days, one every 5 days and one every 8 days. They are all there today. In how many days will all three be there together again?