Listing Factors

ANSWERS

1

How many factors does 196 have?

1 × 196, 2 × 98, 4 × 49, 7 × 28

14 × 14 counts once: 4 × 2 + 1 = 9

Answer 9

2

1001 = 7 × 11 × 13

Find the largest factor of 1001 that is less than 100.

7 × 11 = 77, 7 × 13 = 91

11 × 13 = 143 is too big

Answer 91

3

A number is odd. Its largest factor, apart from the number itself, is 39.
Find the number.

39 pairs with the smallest factor after 1

odd, and 3 goes into 39: 3 × 39 = 117

Answer 117

4

Find the smallest odd number that has exactly six factors.

45: 1, 3, 5, 9, 15, 45

the odd numbers below 45 have fewer

Answer 45

5

Find the two factors of 840 that multiply to make 840 and differ by 2.

29 × 29 = 841, just over 840

28 × 30 = 840

Answer 28 and 30

6

A number between 50 and 100 has exactly five factors.
Find the number.

odd number of factors: a square, 64 or 81

81: 1, 3, 9, 27, 81

Answer 81

7

A number has exactly eight factors.
Two of them are 6 and 7.
Find the number.

a multiple of 6 and of 7, so of 42

42: 1, 2, 3, 6, 7, 14, 21, 42

Answer 42

8

A number has exactly four factors.
The four factors add up to 32.
Find the number.

factors 1, 3, 7 and 3 × 7 = 21

1 + 3 + 7 + 21 = 32

Answer 21