

Boost Free Lessons - Year 5 Maths

Lesson 2: Factors of a Number

Name: _____ Grade: _____ Date: _____

Worked Example 1

Find all the factors of 24.

1. A **factor** divides into a number exactly, with nothing left over.
2. Work in pairs, starting at 1: 1×24 , 2×12 , 3×8 , 4×6 .
3. Next you would try 5, which does not divide 24, then 6, which you already have.
4. Once the pairs meet, you have found them all. Write them in order.

1, 2, 3, 4, 6, 8, 12, 24

Worked Example 2

Find the highest common factor of 18 and 30.

1. List the factors of each number separately.
2. Factors of 18: 1, 2, 3, 6, 9, 18.
3. Factors of 30: 1, 2, 3, 5, 6, 10, 15, 30.
4. The factors in both lists are 1, 2, 3 and 6. The highest is 6.

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Remember: A **factor** divides exactly with no remainder. Find them in **pairs** starting at 1, and stop when the pairs meet in the middle.



Question 1: Answer the following.

1. List all the factors of 12.

2. List all the factors of 20.

3. List all the factors of 16.

4. List all the factors of 36.

5. Is 7 a factor of 42?

6. Is 4 a factor of 30?

7. Is 9 a factor of 63?

8. Is 6 a factor of 52?



Question 2: Answer the following.

1. Find the highest common factor of 12 and 18.

2. Find the highest common factor of 20 and 30.

3. Find the highest common factor of 16 and 24.

4. Which number below 20 has the most factors?

5. Which numbers have exactly two factors: 9, 11, 15 or 21?

6. Why does every number have 1 as a factor?



Question 3: Answer the following questions.

1. Ella has 18 stickers to share equally. List every group size that would work.
2. A class of 24 students must form equal teams. List all the possible team sizes.
3. A rectangle has an area of 36 squares. List three possible pairs of side lengths.
4. Tiles measuring 1 cm are used to build a rectangle of 20 tiles. How many different rectangles are possible?
5. Explain why 1 and the number itself are always factors.





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Answers: Factors of a Number**Question 1**

1. 1, 2, 3, 4, 6, 12
2. 1, 2, 4, 5, 10, 20
3. 1, 2, 4, 8, 16
4. 1, 2, 3, 4, 6, 9, 12, 18, 36
5. Yes
6. No
7. Yes
8. No

Question 2

1. 6
2. 10
3. 8
4. 12 (six factors)
5. 11
6. Because every number can be divided by 1 exactly once.

Question 3

1. 1, 2, 3, 6, 9 or 18
2. 1, 2, 3, 4, 6, 8, 12 or 24
3. Model: 1×36 , 4×9 , 6×6
4. 3 (1×20 , 2×10 , 4×5)
5. Every number divides by 1 exactly, and every number divides into itself exactly once.

