MATH

# Factors and factor pairs



Name _____ Date _____

🎯 **I can find all the factor pairs of a number.**

## 1 How it works 💡

Factors are numbers that multiply to make another number. To find them all, test 1, 2, 3 and so on. 12 = 1 × 12, 2 × 6 and 3 × 4. These are the factor pairs. So the factors of 12 are 1, 2, 3, 4, 6 and 12.

**Factors of 12**

**1 × 12**

**2 × 6**

**3 × 4**

**1, 2, 3, 4, 6, 12**

## 2 Find the factor pairs, then list the factors ✏️

**1 40**

Factor pairs: _____

Factors: _____

**2 45**

Factor pairs: _____

Factors: _____

**3 42**

Factor pairs: _____

Factors: _____

**4 48**

Factor pairs: _____

Factors: _____

**How did I do?** ☆ ☆ ☆

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# List the factors

Name _____ Date _____

I can find every factor of a number.

## 1 List all the factors

Start with 1 and the number itself.

**1** 20
Factors: _____

**2** 32
Factors: _____

**3** 54
Factors: _____

**4** 28
Factors: _____

**5** 56
Factors: _____

**6** 24
Factors: _____

**7** 30
Factors: _____

**8** 18
Factors: _____

## 2 Is it a factor?

Circle yes or no.

1. Is 11 a factor of 36? yes no
2. Is 5 a factor of 45? yes no
3. Is 8 a factor of 54? yes no
4. Is 18 a factor of 54? yes no
5. Is 11 a factor of 48? yes no
6. Is 15 a factor of 30? yes no

**How did I do?** ☆ ☆ ☆

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# Common factors

Name _____ Date _____

I can find the factors two numbers share.

## 1 List the factors. Circle the ones both numbers share.

### 1 12 and 18

Factors of 12:

Factors of 18:

### 2 20 and 30

Factors of 20:

Factors of 30:

## 2 Think about it

1. Which has more factors, 16 or 17?
2. What number is a factor of every number?
3. I am a factor of 20. I am even. I am between 5 and 15.
4. Write a number that has exactly 3 factors.

**How did I do?** ☆ ☆ ☆

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# Word problems

Name _____ Date _____

I can use factors and multiples to solve problems.

## 1 Read, think, answer

Show your thinking in the box.

**1** Zara has 24 cookies to put on plates. Every plate must have the same number of cookies. List all the ways Zara can do it.

**Answer:**

**2** A class has 30 chairs. The teacher wants equal rows with none left over. Can she make rows of 4? Rows of 5?

**Answer:**

**3** Ali has 18 stickers and wants to share them equally with no stickers left over. Which group sizes work: 2, 3, 4, 6 or 9?

**Answer:**

**4** I am a factor of 36. I am an odd number. I am greater than 5. What number am I?

**Answer:**

**How did I do?**

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FOR TEACHERS AND PARENTS

# Answer key: factors and factor pairs

## 1 Page 1

1) 40: 1 × 40, 2 × 20, 4 × 10, 5 × 8. Factors: 1, 2, 4, 5, 8, 10, 20, 40.
2) 45: 1 × 45, 3 × 15, 5 × 9. Factors: 1, 3, 5, 9, 15, 45.
3) 42: 1 × 42, 2 × 21, 3 × 14, 6 × 7. Factors: 1, 2, 3, 6, 7, 14, 21, 42.
4) 48: 1 × 48, 2 × 24, 3 × 16, 4 × 12, 6 × 8. Factors: 1, 2, 3, 4, 6, 8, 12, 16, 24, 48.

## 2 Page 2

List all the factors: 1) 20: 1, 2, 4, 5, 10, 20; 2) 32: 1, 2, 4, 8, 16, 32; 3) 54: 1, 2, 3, 6, 9, 18, 27, 54; 4) 28: 1, 2, 4, 7, 14, 28; 5) 56: 1, 2, 4, 7, 8, 14, 28, 56; 6) 24: 1, 2, 3, 4, 6, 8, 12, 24; 7) 30: 1, 2, 3, 5, 6, 10, 15, 30; 8) 18: 1, 2, 3, 6, 9, 18.

Is it a factor? 1) no; 2) yes; 3) no; 4) yes; 5) no; 6) yes.

## 3 Page 3

Common factors: 1) 12 and 18: 1, 2, 3, 6; 2) 20 and 30: 1, 2, 5, 10.

Think: 1) 16 (it has 5 factors; 17 has only 2); 2) 1; 3) 10; 4) 4, 9, 25 or 49.

## 4 Page 4: word problems

1) 1 × 24, 2 × 12, 3 × 8, 4 × 6 (and each one the other way around), so 8 ways
2) Rows of 4: no (4 is not a factor of 30). Rows of 5: yes, 6 rows.
3) 2, 3, 6 and 9 (they are factors of 18)
4) 9

## 5 Teaching tip 💡

Go in order from 1 and write each factor with its partner. When the next number to test is already in your list, you have found them all.



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