

Factors and Multiples: math practice, Grade 6 – download the PDF

22 problems graded by difficulty (★ easy, ★★ medium, ★★★ hard). Try first, without looking at the solutions!

1 Factors of 28

★ ★ ★

List all the factors of **28** in increasing order. Use factor pairs.

2 Multiples of 9

★ ★ ★

Write the first six multiples of **9**.

3 Prime or composite?

★ ★ ★

Say whether each number is prime, composite, or neither: **17, 21, 29, 39, 1, 51**. Justify composite numbers with a factor.

4 Divisible by 2, 5 or 10

★ ★ ★

For each number, say whether it is divisible by **2**, by **5**, by **10**: **340, 785, 1,206, 4,115**.

5 True or false?



Decide whether each statement is true or false, and explain.

- a. **7** is a factor of **45**.
- b. Every multiple of **6** is even.
- c. **1** is a prime number.
- d. A prime number is always odd.

6 Multiples in a range



List the multiples of **7** that are greater than **40** and less than **70**.

7 GCF by listing



List the factors of **12** and of **30**, then find their GCF.

8 Digit sums



Use the rules for **3** and **9** on **2,718**, **5,436**, **7,305** and **6,481**. Say which are divisible by **3** and which by **9**.

9 Factor tree of 84



Draw a factor tree for **84** and write its prime factorization with exponents.

10 GCF with prime factors



Find **GCF(56, 42)** using prime factorizations.

11 LCM of 6 and 15



Find $\text{LCM}(6, 15)$ by listing multiples.

12 Factoring out the GCF



Rewrite each sum as the GCF times a sum, then evaluate.

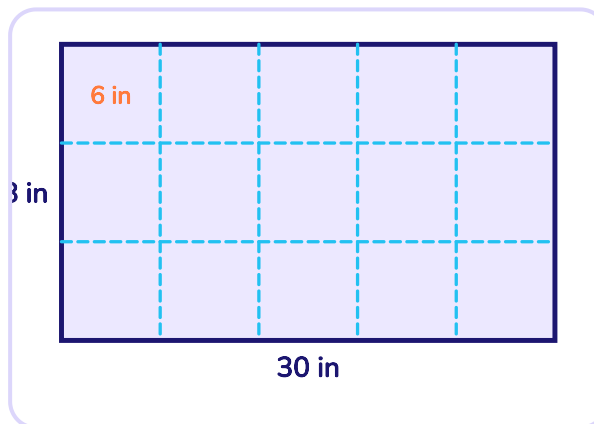
a. $45 + 60$

b. $24 + 40$

13 Tiling a floor



A rectangular floor measures **30** inches by **18** inches (see the figure). A builder wants to cover it with identical square tiles, whole tiles only. What is the largest possible side length of a tile, and how many tiles are needed?



14 Two lighthouses



Lighthouse A flashes every **9** seconds and lighthouse B every **12** seconds. They flash together at midnight exactly. After how many seconds do they flash together again?

15 A mystery number



A number between 40 and 80 is a multiple of 4 and a multiple of 7. What is it?

16 Find the mistake



Sam says: " $\text{LCM}(8, 12) = 96$ because $8 \times 12 = 96$." Explain his mistake and give the correct LCM.

17 School kits



A teacher has 72 pencils and 54 erasers. She makes identical kits with no supplies left over. What is the greatest number of kits? How many pencils and erasers are in each kit?

18 Find the other number



Two numbers have $\text{GCF} = 4$ and $\text{LCM} = 60$. One of them is 12. Find the other and check your answer.

19 Three school bells



Three timers ring every 4, 6 and 10 minutes. They all ring together at noon. At what time do they all ring together again?

20 The missing digit



The number $5\square 4$ has a missing middle digit. Find every digit that makes it divisible by 9. Which of those numbers is also divisible by 4?

21 Sums of multiples



Show that the sum of two multiples of **6** is always a multiple of **6**. Then illustrate with $42 + 78$ and find $\text{GCF}(42, 78)$.

22 Hot dogs and buns



Hot dogs are sold in packs of **8** and buns in packs of **6**. What is the smallest number of hot dogs and buns that gives exactly one bun per hot dog? How many packs of each must you buy?



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Speed drill for Grade 6: how many in 60 seconds?

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