

Math 4e. Homework 3.



1. Factorize (represent as a product of two or more factors, do not use 1 as a factor). Write one or more possible solutions:

Example:  $35 = 3 \cdot 7$ ;  $100 = 4 \cdot 5 \cdot 5$ ;

48; 74; 175; 178; 99.

2. Do the division, write your answer in a form  $a : b = cR(r)$ .

Examples:

$25 : 4 = 6R(1)$ ;  $28 : 7 = 4R(0)$

a.  $19 : 5$ ; b.  $73 : 12$ ; c.  $102 : 5$ ; d.  $126 : 5$ ; 81 : 9;

3. Find all natural numbers such that when divided by 7, the quotient and remainder are equal?

4. Will the sum and the product be even or odd for:

- a. 2 odd numbers
- b. 2 even numbers
- c. 1 even and 1 odd number
- d. 1 odd and 1 even number

Try do not just provide a few examples, but explain your results.

5. Without calculating, establish whether the product is divisible by a number?

a.  $508 \cdot 12$  by 3      b.  $85 \cdot 3719$  by 5;      c.  $2510 \cdot 74$  by 3

d.  $45 \cdot 26 \cdot 36$  by 15;      e.  $210 \cdot 29$  by 3, by 29

6. A boy is 12 years old, which is 3 times older than his sister.

- a. How many years older is the boy than his sister?
- b. How many years older will the boy be than his sister in 4 years?
- c. How many times older will the boy be than his sister in 4 years?

7. Among four consecutive natural numbers will be a number

Divisible by 2?    Divisible by 3?    Divisible by 4?    Divisible by 5?

Explain.

8. The cinema has two auditoriums: a large one and a small one. The large auditorium has 40 rows, with 45 seats in each row. The small auditorium has 25 rows, with 24 seats in each row. How many times does the number of seats in the large auditorium exceed the number of seats in the small auditorium?
9. A bag containing 4 apples and 10 plums weighs 600 g, and a bag containing 2 apples and 10 plums weighs 400 g. How much does an apple weigh and how much does a plum weigh?

