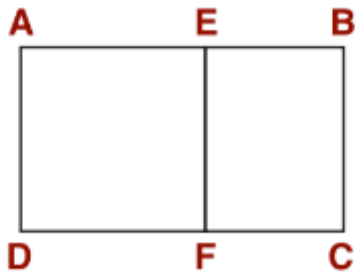


**Grade 7****Problem №1.**

A palindrome, such as 92529, is a number that remains the same when its digits are reversed. The numbers  $A$  and  $A+32$  are three-digit and four-digit palindromes, respectively. What is the sum of the digits of  $A$ ?

**Problem №2.**

Segment  $EF$  divides rectangle  $ABCD$  into two regions: rectangle  $EBCF$ , and square  $AEFD$ . If the ratio of  $AE$  to  $AB$  is 4 to 7, and the perimeter of rectangle  $ABCD$  is 88 units, what is the area of rectangle  $ABCD$ ?

**Problem №3.**

When multiplying two positive integers,  $A$  and  $B$ , Pauline accidentally reversed the digits of the two-digit number  $A$ . Her incorrect product was 161. What is the correct value of the product of the two numbers?

**Problem №4.**

When the three-digit number  $\overline{2A4}$  is added to 329 the result is the three-digit number  $\overline{5B3}$ . If  $\overline{5B3}$  is divisible by 3, what is the largest possible value of  $A$ ?

**Problem №5.**

Find the sum of all odd integers between 500 and 900 that are divisible by both 5 and 11.

**Problem №6.**

A group of 46 students are visiting an amusement park. The tickets are 6 dollars for an individual or 30 dollars for a group **up to** 10 people. What is the **minimum amount** the group has to pay?

**Problem №7.**

In how many different ways can 22 be written as the sum of three different prime numbers?

In other words, determine the number of prime number sets with three elements in each, denoted by  $\{a, b, c\}$ , where  $1 < a < b < c$  and  $a + b + c = 22$ .

**Problem №8.**

There are 34 students in a class. Fifteen of the students have dogs, 18 of them have cats and only five do not have either a cat or a dog. How many students from this class have cats only?