

Subject n°22

SEQUENCE - SPEED

Please do not write on the subject paper and don't forget to give back the examination paper at the end of the test.

Exercise 1

Lauren and Andrew are lost in the desert and are trying to escape. The nearest town is 200km away.

The first day they walk 20 km, but because of the fatigue, they do 5% less each day. How many days will they need to reach the town?

This formula could be used: $1 + q + q^2 + \dots + q^n = \frac{1-q^{n+1}}{1-q}$

Or you may use another experimental method.

Exercise 2

Jenna and Alyssa take part in a 150 km long bicycle race. They start at the same time. The average speed of Jenna is 3 km/h faster than Alyssa's, and thus Jenna arrives 30 minutes before. What is Jenna's average speed, rounded to the nearest hundredth?