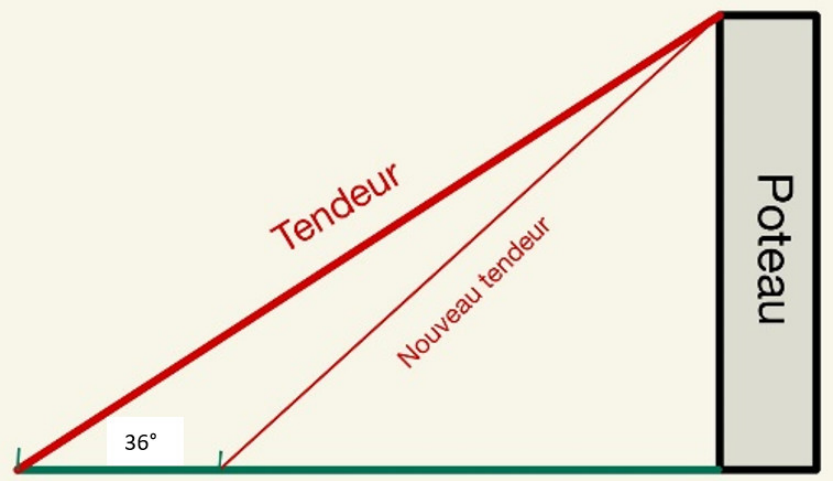
Exercise 1 Calc. : ✓

A post is held by a tensioner, according to the figure below.



From the turnbuckle anchor point, located 18 meters from the base of the post ("Poteau"), the top of the post can be seen at a 36° angle.

1. What is the height of the post ("Poteau")? (round to 2 d. p.) — 2 marks
2. What is the length of the tensioner ("tendeur")? (round to 2 d. p.) — 2 marks

In the rest of the exercise, we consider that the post has a height of 13.08 meters.

3. A new tensioner ("Nouveau tendeur") is anchored 6 meters closer to the post. What angle does it make with the horizontal? — 3 marks

Exercise 2 Calc. : ✓

In two classes A and B the same test was given. The maximum score was 10. The results are below.
Class A.

score	absolute frequency
1	2
3	1
5	6
8	2
10	1

Class B.
There are 6 students in this class. One of them got a 10, four students scored 5, and one scored 4.

1. How many students are there in class A? — 2 marks
2. Calculate the mean of both classes. (round to 3 d. p.) — 2 marks
3. Calculate the standard deviation of class B. (round to 3 d. p.) — 3 marks
4. What is the meaning of a standard deviation? — 2 marks

Exercise 3 Calc. : ✓

A statistical survey has shown that 12% of the athletes of a given sport use a certain doping substance. A lab offers a test.

This test is positive in 95% of all cases in which athletes have taken the doping substance.

Unfortunately, this test is also positive in 2% of all cases in which athletes have not taken the drug.

Give your results in percentage.
We define the following events:

T: athlete tested positive

D: athlete taken doping

1. Illustrate the above data by completing the table below or by using a tree diagram. — 3 marks

	D		
T		176	
	1 200	8 800	10 000

An athlete is randomly selected.

2. Give the probability that the test of the athlete is positive. — 3 marks

3. The test of the athlete is positive. Calculate the probability that the athlete has really used the doping substance. — 3 marks