BACCALAURÉAT GENERAL
EPREUVE SPECIFIQUE DES SECTIONS EUROPENNES
MATHEMATIQUES – ANGLAIS

Corrigé du sujet 15

I. Explain what the text deals with and comment on it.

In August 2017 some researchers found new elements as regards a 3700-year-old clay tablet called Plimpton 322. Many scientists have worked on this tablet and they understood that it helped Babylonians build palaces, temples or canals.

In fact, this tablet contains the world's oldest trigonometric table which gives the shapes of right-angled triangles not thanks to angles or circles but based on ratios.

The Babylonians had a different approach to arithmetic and geometry and it means that Plimpton 322 pre-dates Pythagoras by 1,000 years.

I believe it is quite incredible to understand thousands of years later that some ancient mathematicians could calculate and build things with completely different methods.

II. Exercise

1.

a. $n=p+7$

b. We know that n and p are reciprocals so: $n \times p = 60$. According to the first answer, we deduce the following equation : $p(p+7) = 60 \Leftrightarrow p^2 + 7p - 60 = 0$

c.

d. p=5 et n=12

2.

a. To draw figure 2, we first reproduce figure 1. Then, on the left-hand side of the rectangle, we draw a square whose side is p units. Finally, we divide the right-hand side rectangle into two rectangles of the same area.

To draw figure 3, we place the right-hand side rectangle of figure 2 below the square, so that we get a big square.

b. n×p=60

c. $q=\frac{n-p}{2}=3.5$ donc l'aire du carré blanc est $3.5^2=12.25$

d. L'aire du grand carré est donc 12,25+60=72,25 et son côté est donc 8,5

e. Donc $p=8,5-3,5=5$ et $n=12$

3. With the second method, we only found the positive solution. This is explained by the fact we use a geometric method, so we can't find a negative solution.