BACCALAURÉAT GÉNÉRAL ET TECHNOLOGIQUE

# Session 2012

## *ÉPREUVE SPÉCIFIQUE MENTION « SECTION EUROPÉENNE OU DE LANGUE ORIENTALE »*

Académies de Paris-Créteil-Versailles

**Binôme : Anglais / Mathématiques**

**MAPPING**

**Sujet D1 - 01**

*The first part of this page is a summary that can help you do the exercise.*

⏵ Let *f* be a function.

If *f*(2) = 3, then 3 is called the image of 2 under *f*, and 2 is a pre-image of 3 under *f*.

The domain of *f* is the set of all the numbers that have an image under *f*.

The range of *f*  is the set of all the numbers that can be written as images of a number under *f*.

⏵ Quadratic functions are polynomials in which the largest exponent is 2. The graph of a quadratic function is always a parabola, and the general form of the equation is *y* = *ax*2 + *bx* + *c*.

If *a* > 0, the parabola opens up and has a minimum value.

If *a* < 0, the parabola opens down and has a maximum value.

The *x*-coordinate of the vertex of the parabola is equal to – *b*/2*a* , and the axis of symmetry is the vertical line whose equation is *x* = – *b*/2*a*.

⏵ The solutions to any quadratic equation *ax*2 + *bx* + *c* = 0 such as  = *b*2 – 4*ac* > 0 are given by the formula:



**EXERCISE**

*This exercise is a multiple choice test.*

*For each of the four questions, there is* ***one and only one*** *correct answer.*

*Please circle the answer you think is the correct one, and get ready to explain in detail your answer.*

*Do not worry if you didn’t manage to get through a question: for each question, every step of reasoning you may take will be taken into account.*

Please turn the page

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| **QUESTION 1**  Let function *f* be defined by the accompanying graph.  If , what is the value of *p* ?  numérisation0002   1. – 3 2. – 2 3. 0 4. 1 5. 1.5 | **QUESTION 2**  If *x*2 – 63*x* – 64 = 0 and *p* and *n* are integers such as *pn* is a solution of this equation, which of the following CANNOT be a value for *p*?   1. – 8 2. – 4 3. – 1 4. 4 5. 64 |
| **QUESTION 3**  The range of the function *f* defined by  is : | **QUESTION 4**  The number of integers that satisfy the inequality *x*2 + 48 < 16*x* is:   1. 0 2. 4 3. 7 4. an infinite number 5. none of the above |