

### **The Equality Symbol**

Robert Recorde wrote a mathematics book called *Whetstone of Witte*, which was published in London in 1557 (the year before Elizabeth I became the queen). In that book, “to avoid the tedious repetition of the words ‘is equal to,’ ” he used instead the symbol  $\text{=====}$ . A pair of line segments of the same length were chosen because “no two things could be more equal.” With the passage of time, the segments were shortened until the symbol became  $=$ .

### **Greater Than—Less Than**

The symbols for “greater than” and “less than” were invented by Thomas Harriot, an English mathematician and astronomer. They appeared in his algebra book, which was published in 1631, ten years after his death. He also used Recorde’s symbol of equality. Harriot was appointed geographer for Sir Walter Raleigh’s expedition to Roanoke, Virginia, in 1585–1586.

### **Plus and Minus**

The  $+$  and  $-$  symbols used in addition and subtraction are the result of experimentation over several centuries with various abbreviations and symbols. They came into common use in Europe at about the time Columbus discovered America. Robert Recorde used them along with his equality symbol. During the nineteenth century, as mathematicians turned to the foundations of algebra, they tried various ways of differentiating between “plus and minus” and “positive and negative.” At about the beginning of the twentieth century, the small raised symbols,  $+$  for positive and  $-$  for negative, came into general use in America.

1. Why did Robert Recorde choose a pair of line segments of the same length for the equality symbol?
- A He felt that nothing could be more equal.
  - B He knew that astronomers used the same symbol.
  - C He knew that experiments proved it was the best symbol.
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2. How did the equality symbol that Robert Recorde invented become well-known?
- A He shared his experiments with astronomers.
  - B He discussed it with Queen Elizabeth I.
  - C He explained it in his mathematics book.

3. Who invented the symbols for “greater than” and “less than”?
- A Robert Recorde
  - B Thomas Harriot
  - C Christopher Columbus

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4. When did America begin to use the plus and minus signs?
- A the beginning of the twentieth century
  - B the middle of the twentieth century
  - C the end of the twentieth century

5. Why does the author use section headings?
- A to state the main topic of each paragraph
  - B to make the page look attractive
  - C to create a table of contents
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6. If someone were asked to create a symbol for a new mathematical procedure, what would be *most* important to consider?
- A that it would be used only in one country
  - B that it would be used for only one mathematical operation
  - C that it could have many meanings

7. What is the **best** title for this selection?
- A The History of Mathematical Symbols
  - B How Multiplication Was Developed
  - C How Astronomers Use Mathematics

## End of Sample Items

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**NCEXTEND2 EOG Reading Grade 5 Sample Items**

<b>Selection Title</b>	<b>QID</b>	<b>CorAns</b>	<b>Thinking Skill</b>	<b>ObjNum</b>
Math Symbols	1	A	Knowledge	2.02
Math Symbols	2	C	Knowledge	2.02
Math Symbols	3	B	Knowledge	2.02
Math Symbols	4	A	Organizing	2.02
Math Symbols	5	A	Analyzing	2.10
Math Symbols	6	B	Applying	3.01
Math Symbols	7	A	Analyzing	3.02