3 + ? = 12 8 ? x – 7 = 4 2 x ? + 8 = 17

The History of

Number Systems

Place Value



Gabriel Esmay

For teacher's inspection ONLY

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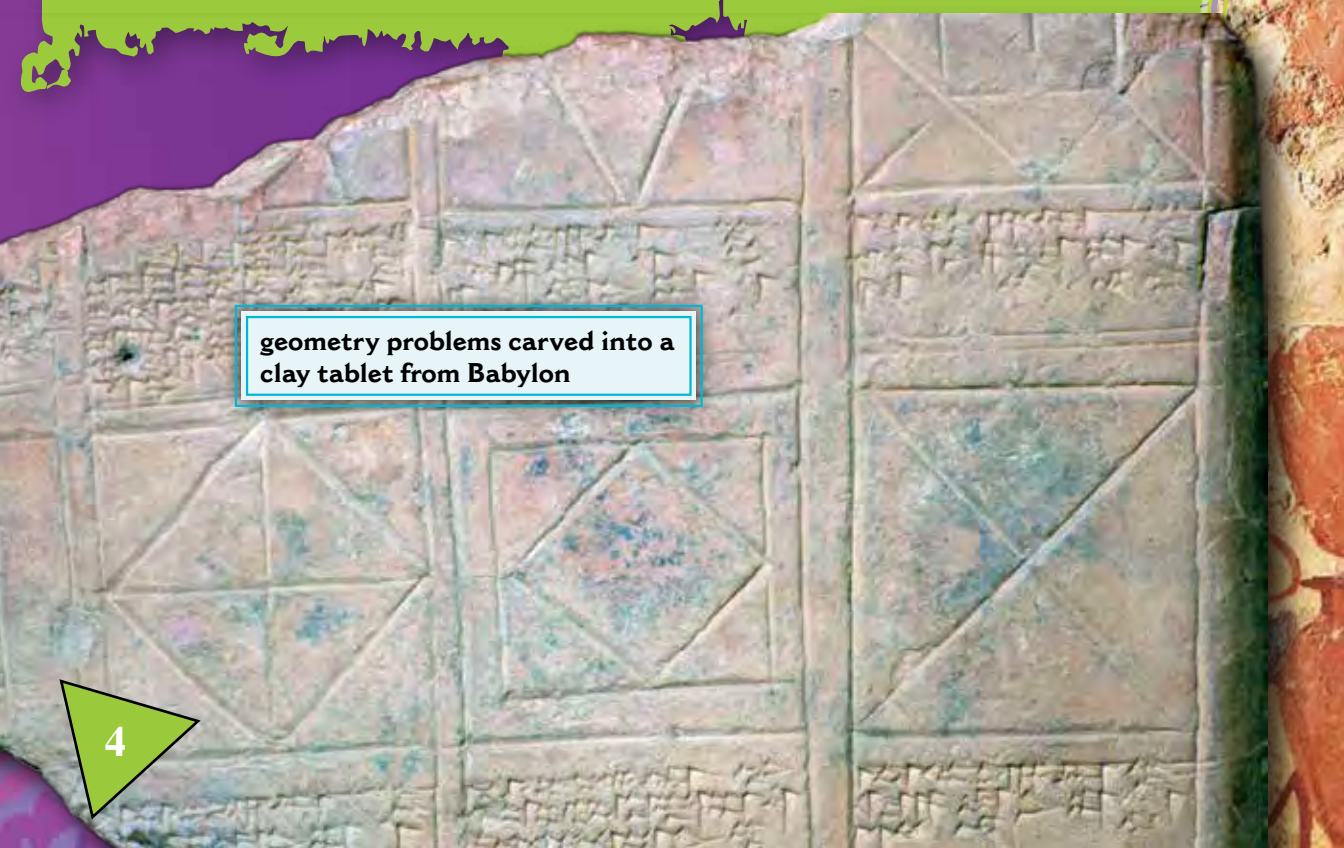
Answer Key 32

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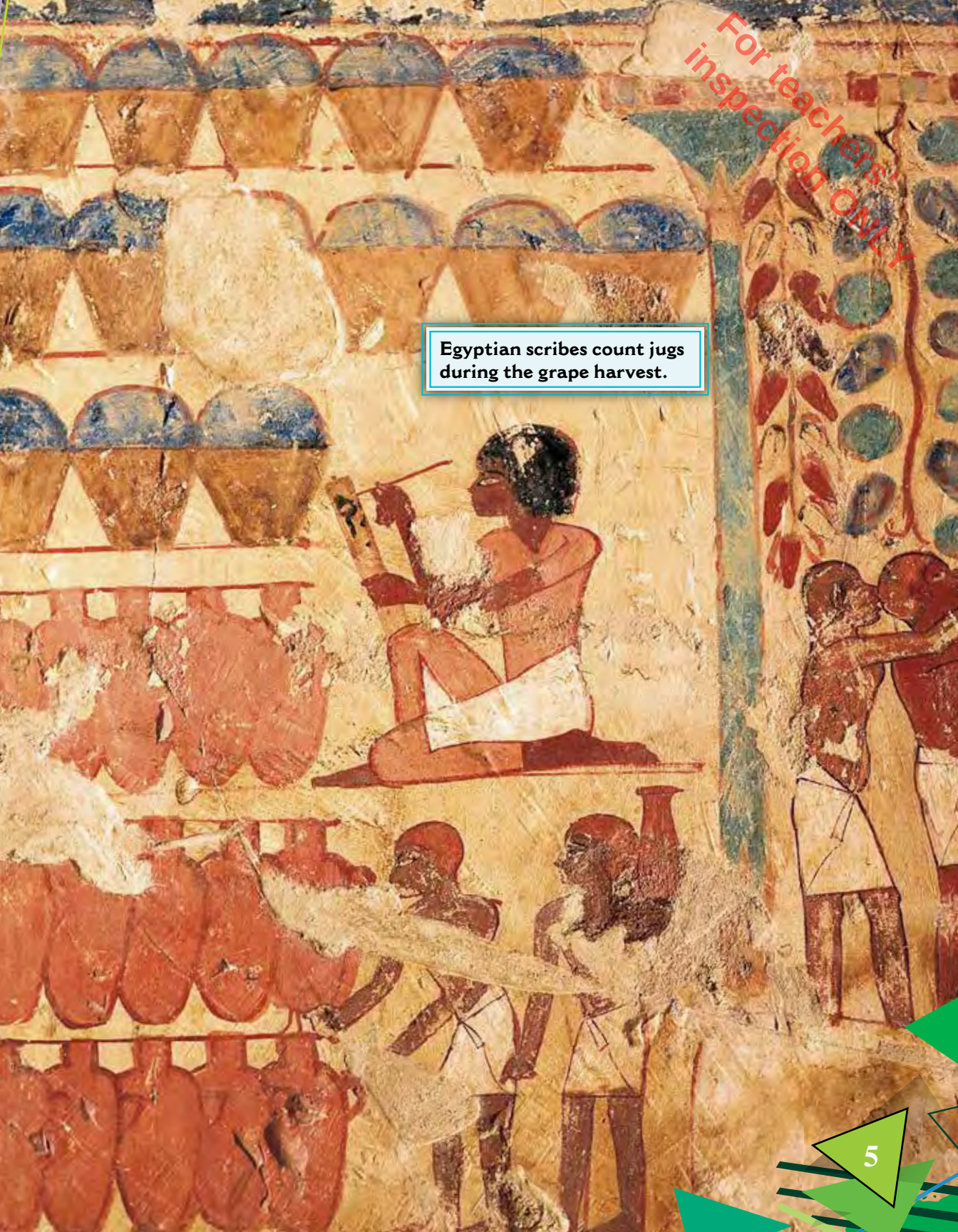
Timeless Need

For as long as humans have walked the earth, they have needed to show numbers. Farmers count **crops** and animals. People track time. Merchants track goods. Builders measure structures. So, people of the past created **number systems**.

Early cultures were very creative. People used pictures, letters, knots, dots, and bars. These symbols stood for numbers. They were carved in stone and clay. They were written on early forms of paper. They were even tied into string. These **ancient** number systems may not look the same as the modern number system. But keep looking. You may just see some things you recognize!



geometry problems carved into a clay tablet from Babylon



Egyptian scribes count jugs during the grape harvest.

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Egypt

The Great Pyramid has stood in Egypt for over four thousand years. It was made from more than two million large stone blocks. It is the only wonder of the ancient world that is still standing. Of course, no modern tools were used. But the builders were not alone. They had math and number systems to help.

the Great Pyramid of Giza





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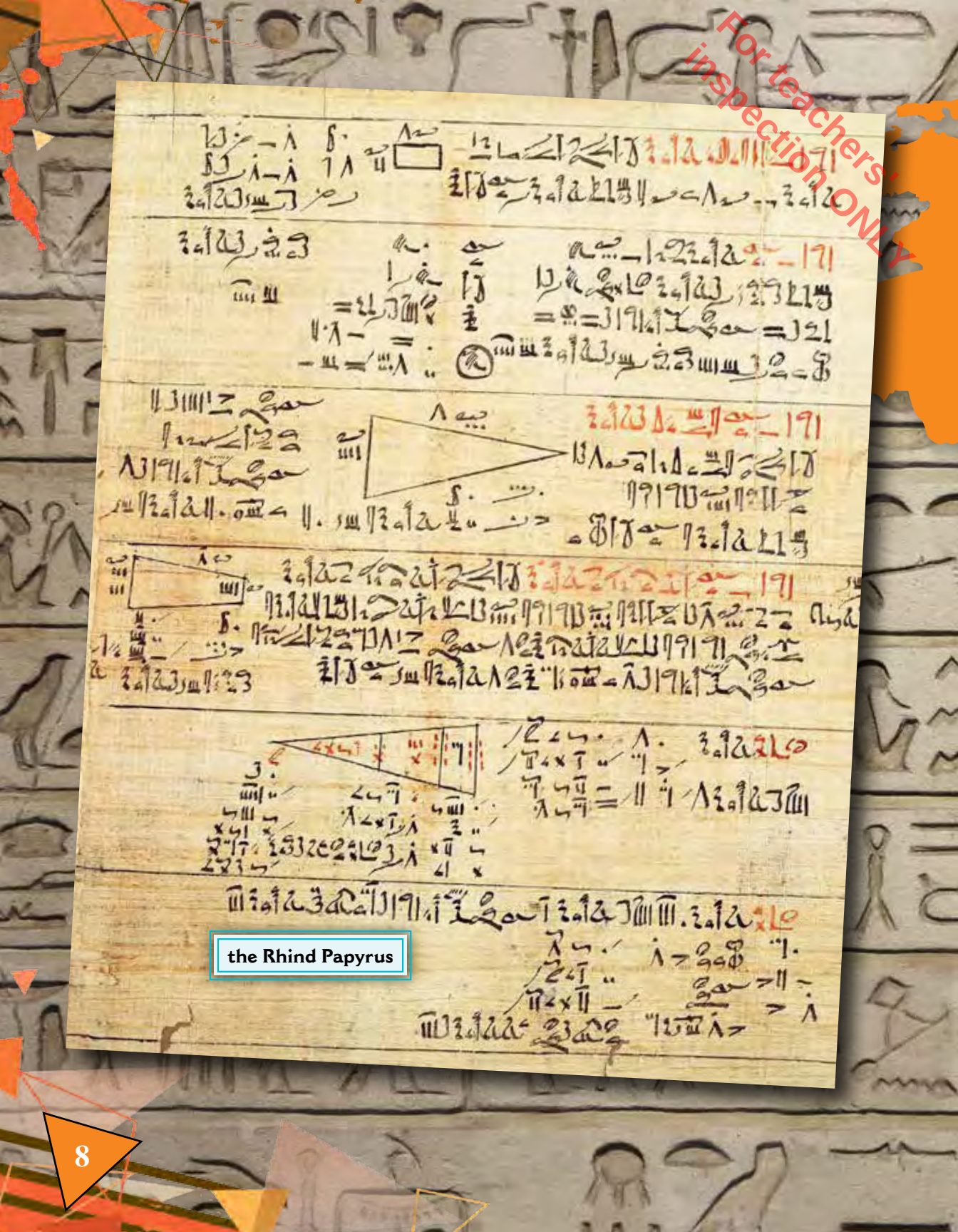
Egyptian symbols do not look the same as numerals today. They were **glyphs**, or pictures, that were carved into stone. They stood for words and numbers.

Just like today, 10 was a key number. Glyphs were carved many times to show larger numbers. To show the number 30, the glyph for 10 was carved three times. If 10 glyphs were needed, a different glyph was used. This way, the number did not take as long to carve.

LET'S EXPLORE MATH

The Great Pyramid of Giza was originally about 481 feet tall. In time, parts of the pyramid have worn away. It is now about 455 feet tall. How can you use place value to tell that 455 feet is less than 481 feet?

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the Rhind Papyrus

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Later, Egyptians started writing on **papyrus**. It was an early paper made out of plants. Over time, the look of some glyphs changed. And, more glyphs were added. The system did not use **place value**. So, symbols could be written in any order. But still, Egyptians used the symbols to do math. They could add and subtract. They could even multiply and divide.

Egyptians could write math problems, too. They wrote the Rhind Papyrus around 1550 BC. It was a very early math text. Many of the problems in the text are about triangles. Others ask how many loaves of bread can be baked. Some ask how many bricks should be used to build a ramp. These problems helped Egyptians in their daily lives. But, there is one thing that was not found on it—a zero! Egyptians had no symbol for zero.

Let's Explore Math

The Rhind Papyrus has 84 math problems. Use the number line to answer the questions.

1. Between which two tens does 84 fall?
2. Which ten is 84 closer to?

