Exploring Goldbach's Conjecture

Lesson 2-5

NAME DATE TIME

① Write each of the following numbers as the sum of two prime numbers.

SRB 54

Examples: 56 = 43 + 13 26 = 13 + 13

a. 6 = _____ **b.** 12 = _____

c. 18 = _____ **d.** 22 = _____

e. 24 = _____ **f.** 34 = _____

The answers to these problems are examples of **Goldbach's Conjecture,** which states that any even number greater than 2 is the sum of two prime numbers. A **conjecture** is something you believe is true even though you cannot be certain that it is because it hasn't been proven. Goldbach's Conjecture appears to be true because no counterexample has ever been found, but no one has ever proven it. Anyone who can either prove or disprove Goldbach's Conjecture will become famous.

② Work with a partner. Write the numbers on the grid on *Math Masters*, page 63 as the sum of two prime numbers.

③ Can any of the numbers on the grid be written as the sum of two prime numbers in more than one way? If so, give an example. Show all possible ways.

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Try This

④ Write 70 as the sum of two prime numbers in as many ways as you can.

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