

34.043.a Goldbach's Conjecture

Name _____

Goldbach's Conjecture: A mathematician named Goldbach thought that all *even* whole numbers greater than 2 could be written as the sum of 2 prime numbers. For example, $4 = 2 + 2$, while $6 = 3 + 3$, and $8 = 5 + 3$, and $10 = 3 + 7$ or $5 + 5$. The term *conjecture* is a fancy word for *guess* - so this could be *Goldbach's Guess!*

For each of the following *even* whole numbers from 2 through 98, find out if Goldbach was right! See if you can find the pair of *prime* numbers that add up to each even whole number below. The first four even prime numbers have been done for you. Some even numbers like 10 have more than one pair of primes with that sum.

The first 25 primes are listed here (four single digits, four in the teens, two in the twenties, etc.):

2, 3, 5, 7 **11, 13, 17, 19** 23, 29 **31, 37** 41, 43, 47 **53, 59** 61, 67 **71, 73, 79** 83, 89 **97**

$4 = \underline{2} + \underline{2}$

$36 = \underline{\quad} + \underline{\quad}$

$68 = \underline{\quad} + \underline{\quad}$

$6 = \underline{3} + \underline{3}$

$38 = \underline{\quad} + \underline{\quad}$

$70 = \underline{\quad} + \underline{\quad}$

$8 = \underline{3} + \underline{5}$

$40 = \underline{\quad} + \underline{\quad}$

$72 = \underline{\quad} + \underline{\quad}$

$10 = \underline{3} + \underline{7} = \underline{5} + \underline{5}$

$42 = \underline{\quad} + \underline{\quad}$

$74 = \underline{\quad} + \underline{\quad}$

$12 = \underline{\quad} + \underline{\quad}$

$44 = \underline{\quad} + \underline{\quad}$

$76 = \underline{\quad} + \underline{\quad}$

$14 = \underline{\quad} + \underline{\quad}$

$46 = \underline{\quad} + \underline{\quad}$

$78 = \underline{\quad} + \underline{\quad}$

$16 = \underline{\quad} + \underline{\quad}$

$48 = \underline{\quad} + \underline{\quad}$

$80 = \underline{\quad} + \underline{\quad}$

$18 = \underline{\quad} + \underline{\quad}$

$50 = \underline{\quad} + \underline{\quad}$

$82 = \underline{\quad} + \underline{\quad}$

$20 = \underline{\quad} + \underline{\quad}$

$52 = \underline{\quad} + \underline{\quad}$

$84 = \underline{\quad} + \underline{\quad}$

$22 = \underline{\quad} + \underline{\quad}$

$54 = \underline{\quad} + \underline{\quad}$

$86 = \underline{\quad} + \underline{\quad}$

$24 = \underline{\quad} + \underline{\quad}$

$56 = \underline{\quad} + \underline{\quad}$

$88 = \underline{\quad} + \underline{\quad}$

$26 = \underline{\quad} + \underline{\quad}$

$58 = \underline{\quad} + \underline{\quad}$

$90 = \underline{\quad} + \underline{\quad}$

$28 = \underline{\quad} + \underline{\quad}$

$60 = \underline{\quad} + \underline{\quad}$

$92 = \underline{\quad} + \underline{\quad}$

$30 = \underline{\quad} + \underline{\quad}$

$62 = \underline{\quad} + \underline{\quad}$

$94 = \underline{\quad} + \underline{\quad}$

$32 = \underline{\quad} + \underline{\quad}$

$64 = \underline{\quad} + \underline{\quad}$

$96 = \underline{\quad} + \underline{\quad}$

$34 = \underline{\quad} + \underline{\quad}$

$66 = \underline{\quad} + \underline{\quad}$

$98 = \underline{\quad} + \underline{\quad}$

