

GOLDBACH'S CONJECTURE

In 1742, Christian Goldbach made a conjecture that:

- a) Each even number greater than 2 is the sum of exactly two prime numbers; and
- b) Each odd number greater than 5 is the sum of exactly three prime numbers.

Can you find the primes that would make Goldbach's Conjecture true for the first 100 whole numbers? The true mathematician will also find all combinations of primes that work. The first 25 primes are: *this answer key does not find*

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

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

$$\underline{3} + \underline{3} + \underline{7} = 13$$

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

$$\underline{3} + \underline{11} = 14$$

$$\underline{2} + \underline{2} + \underline{3} = 7$$

$$\underline{5} + \underline{5} + \underline{5} = 15$$

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

$$\underline{3} + \underline{13} = 16$$

$$\underline{3} + \underline{3} + \underline{3} = 9$$

$$\underline{3} + \underline{7} + \underline{7} = 17$$

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

$$\underline{5} + \underline{13} = 18$$

$$\underline{2} + \underline{2} + \underline{7} = 11$$

$$\underline{3} + \underline{3} + \underline{13} = 19$$

$$\underline{5} + \underline{7} = 12$$

$$\underline{3} + \underline{17} = 20$$

$$\underline{2} + \underline{2} + \underline{17} = 21$$

$$\underline{5} + \underline{17} = 22$$

$$\underline{5} + \underline{7} + \underline{11} = 23$$

$$\underline{5} + \underline{19} = 24$$

$$\underline{5} + \underline{7} + \underline{13} = 25$$

$$\underline{7} + \underline{19} = 26$$

$$\underline{2} + \underline{2} + \underline{23} = 27$$

$$\underline{5} + \underline{23} = 28$$

$$\underline{3} + \underline{3} + \underline{23} = 29$$

$$\underline{11} + \underline{19} = 30$$

$$\underline{3} + \underline{5} + \underline{23} = 31$$

$$\underline{3} + \underline{29} = 32$$

$$\underline{11} + \underline{11} + \underline{11} = 33$$

$$\underline{3} + \underline{31} = 34$$

$$\underline{2} + \underline{2} + \underline{31} = 35$$

$$\underline{5} + \underline{31} = 36$$

$$\underline{3} + \underline{3} + \underline{31} = 37$$

$$\underline{7} + \underline{31} = 38$$

$$\underline{3} + \underline{5} + \underline{31} = 39$$

$$\underline{3} + \underline{37} = 40$$

$$\underline{2} + \underline{2} + \underline{37} = 41$$

$$\underline{5} + \underline{37} = 42$$

$$\underline{3} + \underline{3} + \underline{37} = 43$$

$$\underline{3} + \underline{41} = 44$$

$$\underline{5} + \underline{11} + \underline{29} = 45$$

$$\underline{23} + \underline{23} = 46$$

$$\underline{2} + \underline{2} + \underline{43} = 47$$

$$\underline{11} + \underline{37} = 48$$

$$\underline{3} + \underline{3} + \underline{43} = 49$$

$$\underline{7} + \underline{43} = 50$$

$$\underline{5} + \underline{23} + \underline{23} = 51$$

$$\underline{5} + \underline{47} = 52$$

$$\underline{5} + \underline{5} + \underline{43} = 53$$

$$\underline{7} + \underline{47} = 54$$

$$\underline{7} + \underline{19} + \underline{29} = 55$$

$$\underline{3} + \underline{53} = 56$$

$$\underline{2} + \underline{2} + \underline{53} = 57$$

$$\underline{5} + \underline{53} = 58$$

$$\underline{13} + \underline{23} + \underline{23} = 59$$

$$\underline{7} + \underline{53} = 60$$

$$\underline{3} + \underline{5} + \underline{53} = 61$$

$$\underline{3} + \underline{59} = 62$$

$$\underline{5} + \underline{5} + \underline{53} = 63$$

$$\underline{3} + \underline{61} = 64$$

$$\underline{2} + \underline{2} + \underline{61} = 65$$

$$\underline{13} + \underline{53} = 66$$

$$\underline{3} + \underline{5} + \underline{59} = 67$$

$$\underline{7} + \underline{61} = 68$$

$$\underline{3} + \underline{5} + \underline{61} = 69$$

$$\underline{3} + \underline{67} = 70$$

$$\underline{2} + \underline{2} + \underline{67} = 71$$

$$\underline{5} + \underline{67} = 72$$

$$\underline{3} + \underline{3} + \underline{67} = 73$$

$$\underline{7} + \underline{67} = 74$$

$$\underline{2} + \underline{2} + \underline{71} = 75$$

$$\underline{5} + \underline{71} = 76$$

$$\underline{2} + \underline{2} + \underline{73} = 77$$

$$\underline{5} + \underline{73} = 78$$

$$\underline{3} + \underline{3} + \underline{73} = 79$$

$$\underline{7} + \underline{73} = 80$$

$$\underline{3} + \underline{5} + \underline{73} = 81$$

$$\underline{3} + \underline{79} = 82$$

$$\underline{2} + \underline{2} + \underline{79} = 83$$

$$\underline{5} + \underline{79} = 84$$

$$\underline{3} + \underline{3} + \underline{79} = 85$$

$$\underline{3} + \underline{83} = 86$$

$$\underline{2} + \underline{2} + \underline{83} = 87$$

$$\underline{5} + \underline{83} = 88$$

$$\underline{3} + \underline{3} + \underline{83} = 89$$

$$\underline{7} + \underline{83} = 90$$

$$\underline{3} + \underline{5} + \underline{83} = 91$$

$$\underline{3} + \underline{89} = 92$$

$$\underline{3} + \underline{7} + \underline{83} = 93$$

$$\underline{5} + \underline{89} = 94$$

$$\underline{3} + \underline{3} + \underline{89} = 95$$

$$\underline{7} + \underline{89} = 96$$

$$\underline{7} + \underline{7} + \underline{83} = 97$$

$$\underline{17} + \underline{79} = 98$$

$$\underline{5} + \underline{5} + \underline{89} = 99$$

$$\underline{3} + \underline{97} = 100$$

$$\underline{7} + \underline{11} + \underline{83} = 101$$

$$\underline{5} + \underline{97} = 102$$

$$\underline{3} + \underline{3} + \underline{97} = 103$$

$$\underline{7} + \underline{97} = 104$$