

Investigating Prime Numbers

The Goldbach Conjecture states that all **even numbers** greater than two can be written as the **sum** of two **prime numbers**.

Show that this is true for all even numbers from 4 to 50.

4	$2 + 2$	28	$17 + 11$
6	$3 + 3$	30	$23 + 7$
8	$3 + 5$	32	$19 + 13$
10	$5 + 5$	34	$17 + 17$
12	$7 + 5$	36	$19 + 17$
14	$11 + 3$	38	$19 + 19$
16	$13 + 3$	40	$23 + 17$
18	$13 + 5$	42	$23 + 19$
20	$13 + 7$	44	$13 + 31$
22	$11 + 11$	46	$23 + 23$
24	$13 + 11$	48	$31 + 17$
26	$13 + 13$	50	$31 + 19$

Goldbach also suggested that all **integers** (whole numbers) **greater than six** can be written as the sum of **three prime** numbers.

Show that this is true for all numbers from 6 to 25.

6	$2 + 2 + 2$	16	$2 + 3 + 11$
7	$2 + 2 + 3$	17	$3 + 3 + 11$
8	$2 + 3 + 3$	18	$2 + 3 + 13$
9	$3 + 3 + 3$	19	$3 + 5 + 11$
10	$2 + 3 + 5$	20	$2 + 7 + 11$
11	$3 + 3 + 5$	21	$3 + 5 + 13$
12	$2 + 3 + 7$	22	$2 + 7 + 13$
13	$3 + 3 + 7$	23	$5 + 7 + 11$
14	$2 + 5 + 7$	24	$2 + 5 + 17$
15	$3 + 5 + 7$	25	$7 + 7 + 11$