



Problem of the Week

Problem D

Thinking About Primes

A *prime* number is any number that has exactly two positive integer factors, 1 and the number itself. A *composite* number has more than two positive integer factors. The number 1 is neither prime nor composite.

Goldbach's conjecture states that every even integer greater than 2 can be expressed as the sum of two primes. This conjecture is one of the oldest unsolved number theory problems in mathematics. The conjecture has been shown to be true for all even integers up to 4×10^{18} . You could verify this conjecture for all even two-digit numbers but we won't ask you to do it today. However, Goldbach's conjecture will be useful in solving our problem.

How many two-digit numbers cannot be written as the sum of two primes?



10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

