

Year 5: Prime and composite numbers: answers

Year 5 - Prime Numbers, Factors, Squares and Cubes - Lesson 3.4

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/ks2-sats/maths/year-5/ch03-factors-primes-squares-cubes/prime-and-composite-numbers/

Exercise 3E Prime and composite numbers Non-calculator

1 Write the factors of each number. Then write whether the number is prime, composite or neither.

(a) 1

Answer: Neither

(b) 7

Answer: Prime

(c) 9

Answer: Composite

(d) 11

Answer: Prime

(e) 15

Answer: Composite

(f) 17

Answer: Prime

2 Write down the prime numbers in this list. 2, 9, 11, 15, 17, 21, 23, 27

Answer: 2, 11, 17, 23

3 Remember the prime numbers up to 19.

(a) Write all the prime numbers up to 19.

Answer: 2, 3, 5, 7, 11, 13, 17, 19

(b) Fill in the missing primes: 2, 3, 7, 13, 19

Answer: 5, 11, 17

4 Maya is making a sieve. She has shaded the multiples of 2, 3 and 5 (but not the numbers 2, 3 and 5). The numbers that are not shaded are still to be tested.

1	2	3	4	5	6	7	8	9	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	100

- (a) Some numbers that are not shaded are not prime. Write them. (Do not include 1.)

Answer: 49, 77, 91

- (b) What do these numbers have in common?

Answer: They are all multiples of 7

- 5 Use the tests of divisibility for 2, 3, 5 and 7. Is each number prime? Write Prime or Not prime.

- (a) 39

Answer: Not prime

- (b) 53

Answer: Prime

- (c) 57

Answer: Not prime

- (d) 71

Answer: Prime

- (e) 87

Answer: Not prime

- (f) 89

Answer: Prime

- 6 Write all the prime numbers between 30 and 50.

Answer: 31, 37, 41, 43, 47

- 7 Each of these numbers is made by multiplying two prime numbers. Find the two primes.

- (a) 35

Answer: 5 and 7

- (b) 77

Answer: 7 and 11

- (c) 91

Answer: 7 and 13

- 8 I am a prime number between 30 and 50. My digits add up to 7. What number am I?

Answer: 43

- 9 Mia says, "Every odd number is a prime number." Is Mia right? Give an example to show.

Answer: No. 9 is odd but is not prime ($9 = 3 \times 3$).

- 10 Always, sometimes or never?

(a) A prime number is odd.

Answer: Sometimes

(b) A number with exactly two factors is a prime number.

Answer: Always

(c) The sum of two prime numbers is a prime number.

Answer: Sometimes

11 Which number is the odd one out? Explain. 11 13 17 21

Answer: 21

12 Prove it! Explain why no even number bigger than 2 is a prime number.

Answer: Every even number has 2 as a factor, as well as 1 and itself, so it has more than two factors.

13 Amira says, "51 is prime, because it is not in the 2, 5 or 10 times tables." Is Amira right?

Answer: No. $51 = 3 \times 17$.

14 Challenge! Find three pairs of prime numbers that add up to 30.

Answer: $7 + 23$, $11 + 19$, $13 + 17$