

Year 5: Putting it all together: clues and reasoning: answers

Year 5 - Prime Numbers, Factors, Squares and Cubes - Lesson 3.7

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/putting-it-all-together-clues-and-reasoning/

Exercise 31 Number clues and reasoning Non-calculator

- 1 I am a multiple of 7 between 50 and 80. I am an odd number. My digits add up to 9. What number am I?

Answer: 63

- 2 I am a factor of 36. I am an even number. I am a multiple of 3. I am between 8 and 15. What number am I?

Answer: 12

- 3 I am a prime number between 50 and 70. My digits add up to 8. What number am I?

Answer: 53

- 4 I am a square number between 100 and 1,000. I am a multiple of 5 and a multiple of 6. What number am I?

Answer: 900

- 5 Find all the numbers with exactly...

- (a) 2 factors, up to 20

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

- (b) 3 factors, up to 30

Answer: 4, 9, 25

- (c) 4 factors, up to 20

Answer: 6, 8, 10, 14, 15

- 6 Which numbers between 50 and 100 have the most factors? How many factors is that?

Answer: 60, 72, 84, 90, 96 (12 factors each)

- 7 One lighthouse flashes every 6 seconds. Another lighthouse flashes every 9 seconds. They flash together now (at 0 seconds).

- (a) After how many seconds do they next flash together?

Answer: 18 seconds

- (b) How many times do they flash together in the next 2 minutes (120 seconds), not counting the start?

Answer: 6

- 8 Three buses leave a stop at 8:00 am. Bus 1 leaves every 3 minutes, bus 2 every 5 minutes and bus 3 every 6 minutes. After how many minutes do all three buses leave together again?

Answer: 30 minutes

- 9 Prove it! Show that 93 is not a prime number.

Answer: $93 = 3 \times 31$

10 Always, sometimes or never?

- (a) A multiple of 4 is a multiple of 8.

Answer: Sometimes

- (b) A factor of 12 is a factor of 24.

Answer: Always

- (c) A cube number is an even number.

Answer: Sometimes

11 Which number is the odd one out? Explain. 16 36 64 50

Answer: 50

12 Zainab says, "The lowest common multiple of 5 and 6 is 11, because $5 + 6 = 11$." Is Zainab right? Explain.

Answer: No. The LCM of 5 and 6 is 30.

13 Challenge! Find the number less than 50 that has exactly five factors.

Answer: 16