

## Max's Mathematical Factors and Multiples Challenge

*Learning objective: To identify, name, and write factors and multiples of numbers up to 144, including recognising prime numbers and patterns.*

Help Max the monkey solve these number puzzles! Read each question carefully, choose the correct option or write your answer clearly. Good luck, math explorers!

Answer Key: 1) C (6), 2) B (24), 3) True, 4) False (3 is a factor), 5) 7, 6) 12, 7) A (1, 2, 4, 5, 10, 20), 8) True, 9) 11, 10) 4. Explanation for Q10: A square number is a product of a number multiplied by itself.  $2 \times 2 = 4$ .

*Word bank: Factor · Multiple · Product · Prime · Composite · Divisible*

1. Max is looking for a factor of 12. Which of these is a factor? A) 5, B) 8, C) 6\*, D) 7 (1 mark)

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2. Which of these is a multiple of 8? A) 10, B) 24\*, C) 30, D) 44 (1 mark)

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3. True or False: 10 is a multiple of 2. (1 mark)

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4. True or False: 3 is NOT a factor of 15. (1 mark)

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5. What is the largest factor of 7 that is not 1? (1 mark)

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6. Max wants the smallest multiple of 4 and 3 (the lowest common multiple). What is it? (1 mark)

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7. Which list contains all the factors of 20? A) 1, 2, 4, 5, 10, 20\*, B) 1, 2, 5, 20, C) 2, 4, 5, 10, D) 1, 4, 5, 10 (1 mark)

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8. True or False: All multiples of 5 end in either a 0 or a 5. (1 mark)

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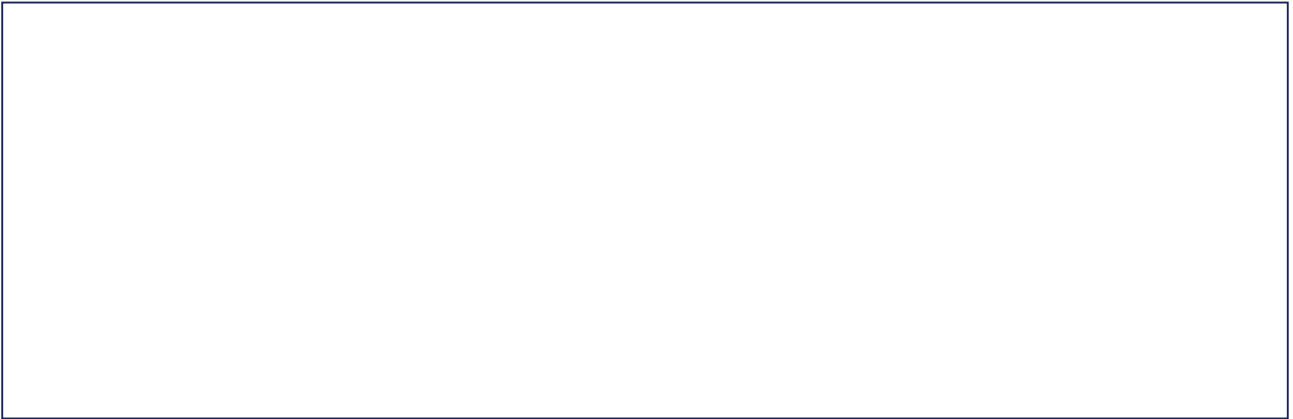
9. What is the next prime number after 7? (1 mark)

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10. Max finds a square number that is a multiple of 4. What is the smallest square number greater than 1? (1 mark)

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**Draw:** Draw a 'Factor Tree' for the number 24. Show the branches splitting into smaller factors until you reach prime numbers at the bottom.



*Extension challenge: Greater Depth Challenge: 1) Explain why a prime number only has two factors. 2) Compare and contrast factors and multiples—how do they behave differently as numbers get larger? 3) Justify your answer: Is it possible for a number to be its own multiple and its own factor? 4) What might happen if you tried to find the largest multiple of 6? 5) If Max has £12 to spend on apples costing £3 each, explain how factors help him know he can buy exactly 4 apples. 6) Create your own number riddle involving a mystery number, its factors, and its multiples for a friend to solve.*