

# Max's Mathematical Mountain Expedition

*Learning objective: To subtract numbers with up to four digits using formal written methods, including exchanging across columns.*

Join Max the monkey as he climbs the Mathematical Mountain! Solve these subtraction puzzles to help him reach the summit. Read each question carefully and show your working out.

Answer Key: 1. C (214); 2. True; 3. 2,356; 4. B (£4.65); 5. False; 6. 3,842; 7. 1,675; 8. C (4,236); 9. True; 10. 1,482.

*Word bank: difference · exchange · subtract · column · total · calculation · remainder · value*

**1. Max has 867 bananas. He shares 653 with his friends. How many does he have left? A) 224 B) 211 C) 214\* D) 204 (1 mark)**

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**2. True or False: When we subtract, the 'difference' is the answer we find between two numbers. (1 mark)**

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**3. Calculate:  $5,789 - 3,433 = ?$  (1 mark)**

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**4. Max had £8.50. He spent £3.85 on climbing rope. How much change did he receive? A) £4.75 B) £4.65\* C) £5.65 D) £4.55 (1 mark)**

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**5. True or False: In the calculation  $500 - 125$ , you do not need to exchange any tens or hundreds. (1 mark)**

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**6. Solve the column subtraction:  $7,955 - 4,113 = ?$  (1 mark)**

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**7. What is the difference between 4,500 and 2,825? (1 mark)**

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**8. Which calculation results in 4,236? A)  $6,000 - 1,864$  B)  $5,000 - 1,774$  C)  $8,500 - 4,264$ \* D)  $7,200 - 3,066$  (1 mark)**

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**9. True or False: Subtracting 1,000 from 9,432 is the same as just changing the digit in the thousands column. (1 mark)**

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**10. Max is 3,500 metres up the mountain. He descends 2,018 metres. What is his new altitude? (1 mark)**

**Draw: Draw Max the monkey standing on top of a mountain with a backpack full of numbers, holding a sign that shows the calculation  $1000 - 456$ .**



*Extension challenge: 1. Explain why it is important to line up your digits in the correct columns when performing a formal written subtraction. 2. Compare and contrast subtracting using a number line versus the formal column method. Which do you prefer and why? 3. Justify your answer: If you subtract 500 from 2,345, will the thousands digit change? Explain your reasoning. 4. What might happen if you forget to exchange when subtracting across a zero? 5. Create a word problem involving money that requires at least two exchanges to solve. 6. If Max climbs 1,200 metres, then descends 450 metres, and then climbs another 300 metres, write a multi-step calculation to find his final height.*