### 🔢 Mixed Algebra & Logic – Additional MCQs

 **If X × 25% = 37.5, what is the value of X?**  
a) 125 b) 150 c) 75 d) 100  
✅ **Answer: a) 150**

 **Two people had different amounts of money before entering a mall. Person A had £32 more than Person B. Inside, B gives A £32. After that, the ratio A:B becomes 5:3. What were their original amounts?**  
a) A=£96, B=£64 b) A=£80, B=£48 c) A=£85, B=£53 d) A=£72, B=£40  
✅ **Answer: b) A = £80, B = £48**

 **The difference between a two‑digit number and the number obtained by reversing its digits is 36. What is the difference between its digits?**  
a) 2 b) 4 c) 6 d) 8  
✅ **Answer: c) 6**

 **A school has 15 classrooms, each with 20 benches, each bench seats 6 children. How many children total can sit?**  
a) 1,800 b) 1,600 c) 2,000 d) 1,750  
✅ **Answer: a) 1,800**

 **A watch and a phone together cost £1,950. The phone is 60% more expensive than the watch. What is the price of the watch?**  
a) £750 b) £870 c) £600 d) £650  
✅ **Answer: c) £600**

 **P, Q, R, S, T, U study different subjects and have different residences. Given constraints, Q studies which subject?**  
a) English b) Mathematics c) History or Statistics d) Physics  
✅ **Answer: c) History or Statistics**

 **One person invested £1,500 for 5 months and earned £240. After 5 months, a friend joined and together earned £310 that period. How much did the friend invest?**  
a) £1,000 b) £1,200 c) £1,250 d) £1,500  
✅ **Answer: b) £1,200**

 **Hasan invested £2,100 monthly for 5 months. Friend Abdullah joined later for 7 months. At year-end Hasan earned £240, Abdullah £360. How much did Abdullah invest monthly?**  
a) £600 b) £700 c) £900 d) £1,050  
✅ **Answer: a) £600**

 **Two runners run laps of 340 m. Slower at 30 m/s, faster at 40 m/s. How long until the slower fully overtakes the faster (i.e. gains a full lap)?**  
a) 34 s b) 45 s c) 51 s d) 68 s  
✅ **Answer: d) 68 s**

 **Which is larger: 4/3 or 12/7?**  
a) 4/3 b) 12/7 c) They are equal d) Cannot determine  
✅ **Answer: b) 12/7 (≈1.714 > 1.333)**

 **You bought a bag for £4,000. Sold it at 30% profit after giving a 13.5% discount on its marked price. What was the marked price?**  
a) £4,800 b) £4,700 c) £4,600 d) £4,900  
✅ **Answer: a) £4,800**

 **A person bought a shop for £80,000 and spent £6,000 on improvements. Sold with 25% profit. Selling price =**  
a) £108,000 b) £107,500 c) £107,000 d) £106,500  
✅ **Answer: a) £108,000**

 **X sells an item to Y at 15% profit. Y sells to Z at 10% profit. Total profit over original =**  
a) 25.5% b) 24% c) 26.5% d) 23.5%  
✅ **Answer: a) 25.5%**

 **A product costs £3,000. Sold with a 30% profit after a 12% discount. What was the pre‑discount (marked) price?**  
a) £3,750 b) £3,600 c) £3,900 d) £4,000  
✅ **Answer: a) £3,750**

 **If x% of £2,500 = £625, what is x?**  
a) 25% b) 20% c) 30% d) 15%  
✅ **Answer: a) 25%**

 **A number increased by 25% equals 150. What is the original number?**  
a) 120 b) 125 c) 130 d) 140  
✅ **Answer: a) 120**

 **If you divide £360 in the ratio 5:7 between A and B, how much does A get?**  
a) £200 b) £150 c) £160 d) £180  
✅ **Answer: b) £150**

 **A two‑digit number is three times the sum of its digits. What could it be?**  
a) 36 b) 63 c) 45 d) 54  
✅ **Answer: a) 36** (3+6=9 → 9×3=27, nope; answer correctly **54** → sum=9 ×3=27, wrong; correct is **54 sum=9×3=27** fits? Actually **54**) Choose: **d) 54**

 **If person A’s amount is increased by 20% and B’s by 25%, A’s new amount = B’s old amount. Ratio A:B = 5:4. Who is larger originally?**  
a) A b) B c) Equal d) Cannot say  
✅ **Answer: b) B**

 **A work takes 30 days by one person; another takes 20 days. If they work together, how many days?**  
a) 12 b) 13 c) 11 d) 10  
✅ **Answer: a) 12 days (combined rate)**

**If 75% of X = 150, what is X?**  
a) 200 b) 175 c) 180 d) 210  
✅ **Answer: a) 200**

**Two friends split a bill. One paid 40% of the total (£60). What was the full bill?**  
a) £150 b) £120 c) £140 d) £130  
✅ **Answer: b) £150**

**A number minus its 40% equals 180. What is the number?**  
a) 300 b) 250 c) 260 d) 270  
✅ **Answer: a) 300**

**A man had £500. He spent 20%, then another 30% of the remainder. How much is left?**  
a) £280 b) £300 c) £320 d) £350  
✅ **Answer: a) £300** (First spends £100 ⇒ £400 remaining, then 30% of £400 = £120 spent, so £280 left – correction: actually £280, so a) £280)

**A two‑digit number reversed has digits swapped. Sum of original and reversed is 99. What is the original number?**  
a) 45 b) 54 c) 36 d) 63  
✅ **Answer: b) 54** (54 + 45 = 99)

**Three people share £1,200 in ratio A:B:C = 2:3:5. How much does C get?**  
a) £500 b) £300 c) £400 d) £200  
✅ **Answer: a) £500**

**A gear turns 180° in 2 seconds; how long (in seconds) for 270° at same rate?**  
a) 2.5 b) 3 c) 3.5 d) 4  
✅ **Answer: b) 3** (0.5°/s gives 270° in 3 s)

**If (X – 15) = 60% of X, what is X?**  
a) 30 b) 37.5 c) 25 d) 35  
✅ **Answer: b) 37.5**

**A rectangle’s perimeter is increased by 20%. If only one side is increased and the other stays same, by what percent must that one side increase?**  
a) 20% b) 25% c) 30% d) 40%  
✅ **Answer: b) 25%** (Let side a and b: perimeter = 2(a + b). If we raise a to a×1.25, new perimeter = 2(1.25a + b) = 1.2×2(a + b) ⇒ works.)

**If the product of two consecutive even numbers is 120, what are they?**  
a) 10 & 12 b) 12 & 14 c) 8 & 10 d) 6 & 8  
✅ **Answer: a) 10 & 12** (10×12 = 120)