Mental Math and Number Sense

Use this key to check answers and read the explanations.

1. A scoreboard reads 4,086. What value does the digit 8 have?
   - A. 80
   - B. 8
   - C. 800
   - D. 8,000

   Correct answer: A. 80
   The 8 is in the tens place, so it stands for eight tens, or 80.

2. A team earns 28 points in one round and 37 in the next. What is its total?
   - A. 64
   - B. 55
   - C. 65
   - D. 75

   Correct answer: C. 65
   Add 28 and 37. Combining 20 and 30 gives 50, and 8 and 7 add another 15.

3. Which number rounds to 470 to the nearest ten?
   - A. 462
   - B. 468
   - C. 475.9
   - D. 476

   Correct answer: B. 468
   468 lies between 465 and 475, so it rounds to 470. Both 475.9 and 476 round up to 480.

4. How many complete packs of 8 cards can you fill with 72 cards?
   - A. 11
   - B. 8
   - C. 10
   - D. 9

   Correct answer: D. 9
   Nine groups of eight make 72, with no cards left over.

5. Which number is greater than 3.07 but less than 3.2?

A. 3.007
B. 3.15
C. 3.7
D. 3.25

Correct answer: B. 3.15
Write 3.2 as 3.20. The hundredths in 3.15 lie between 07 and 20.

6. A scorekeeper calculates 18 − 3 × 4. What is the result under standard order of operations?

A. 6
B. 60
C. 48
D. 30

Correct answer: A. 6
Multiply 3 by 4 first, then subtract 12 from 18.

7. A carton holds 36 tickets. How many tickets are in seven cartons and one half-full carton?

A. 288
B. 252
C. 260
D. 270

Correct answer: D. 270
Seven full cartons hold 252 tickets. Half of 36 is 18, bringing the total to 270.

8. A backpack costs $42. What price appears after a 10% discount, before tax?

A. $38.20
B. $32.00
C. $37.80
D. $41.58

Correct answer: C. $37.80
Ten percent of $42 is $4.20. Subtract that amount to get $37.80.

9. One shop sells 6 notebooks for $9. Another sells 8 for $11.20. How much cheaper per notebook is the second shop?

A. $0.10
B. $0.20
C. $0.40
D. $0.60

Correct answer: A. $0.10
The first shop charges $1.50 per notebook. The second charges $1.40, a difference of $0.10.

10. A charity raised $360 last week and $450 this week. By what percentage did its weekly total rise?

A. 125%
B. 20%
C. 80%
D. 25%

Correct answer: D. 25%
The increase is $90. Dividing the increase by the original $360 gives 0.25, or 25%.

11. Two numbers have a sum of 94. The larger exceeds the smaller by 18. What is the larger number?

A. 52
B. 47
C. 56
D. 62

Correct answer: C. 56
Remove the difference from 94 to leave 76 split evenly. Add 18 to one share of 38 to get 56.

12. A store marks $80 down by 25% and then gives 10% off the reduced price. What is the final price before tax?

A. $52
B. $54
C. $55
D. $58

Correct answer: B. $54
After the 25% discount the price is $60. Ten percent of $60 is $6, leaving $54.

13. A group earns 24, 31 and 34 points in three rounds. What fourth-round score gives a mean of 32?

A. 41
B. 32
C. 37
D. 39

Correct answer: D. 39
A mean of 32 over four rounds requires 128 points. The first three total 89, so the last must add 39.

14. A class has 30 students. On Monday, 80% attend. On Tuesday, half as many students are absent as on Monday. How many attend Tuesday?

A. 27
B. 24
C. 25
D. 28

Correct answer: A. 27
Six students miss Monday. Three miss Tuesday, so 30 − 3 = 27 attend.

15. A team has 96 credits. It uses 25% of them, then earns 18 more credits. Each new entry costs 12 credits. After buying as many entries as possible, how many credits remain?

A. 8
B. 0
C. 6
D. 10

Correct answer: C. 6
Spending 24 leaves 72. Adding 18 gives 90. Seven entries use 84 credits, leaving 6.