Arithmetic Reasoning

1. A student got twice as many sums wrong as he got right. If he attempted 48 sums in all, how many did he solve correctly?

Ans. 16

Suppose the boy got x sums right and 2x sums wrong.

Then, $x + 2x = 48 \Leftrightarrow 3x = 48 \Leftrightarrow x = 16$.

2. In a group of cows and hens, the number of legs are 14 more than twice the number of heads. The number of cows is

Ans.7

Let the number of cows be x and the number of hens be y.

Then, $4x + 2y = 2(x + y) + 14 \Leftrightarrow 4x + 2y = 2x + 2y + 14 \Leftrightarrow 2x = 14 \Leftrightarrow x = 7$.

3. Find the number which when added to itself 13 times, gives 112.

Ans. 8
Let the number be x. Then, $x + 13x = 112 \Leftrightarrow 14x = 112 \Leftrightarrow x = 8$.

4. At the end of a business conference the ten people present all shake hands with each other once. How many handshakes will there be altogether ?

Ans. 45

Clearly, total number of handshakes = (9+ 8 + 7 + 6 + 5 + 4 + 3 + 2+1) = 45

also, taking n=9 in n(n+1)/2 gives 9(10)/2 = 45

5. A group of 1200 persons consisting of captains and soldiers is travelling in a train. For every 15 soldiers there is one captain. The number of captains in the group is----

Ans. 75

Clearly, out of every 16 persons, there is one captain. So, number of captains (1200/16) = 75.

6. In a caravan, in addition to 50 hens, there are 45 goats and 8 camels with some keepers. If the total number of feet be 224 more than the number of heads in the caravan, the number of keepers is------

Ans. 15

Let number of keepers be x. Then,

Total number of feet = 2 x 50 + 4 x 45 + 4 x 8 + 2x = 2x + 312.

Total number of heads = 50 + 45 + 8 + x= 103 + x.

Therefore (2x + 312) = (103 + x) + 224 or x = 15

7. A monkey climbs 30 feet at the beginning of each hour and rests for a while when he slips back 20 feet before he again starts climbing in the beginning of the next hour. If he begins his ascent at 8.00 a.m., at what time will he first touch a flag at 120 feet from the ground?

Ans. 6 pm

Net ascent of the monkey in 1 hour = (30 - 20) feet = 10 feet.

So, the monkey ascends 90 feet in 9 hours i.e. till 5 p.m.

Clearly, in the next 1 hour i.e. till 6 p.m. the monkey ascends remaining 30 feet to touch the flag.

8. Nitin's age was equal to square of some number last year and the following year it would be cube of a number. If again Nitin's age has to be equal to the cube of some number, then for how long he will have to wait?

Ans. 38

Clearly, we have to first find two numbers whose difference is 2 and of which the smaller one is a perfect square and the bigger one a perfect cube.

Such numbers are 25 and 27.

Thus, Nitin is now 26 years old. Since the next perfect cube after 27 is 64,

so required time period = (64 - 26) years = 38 years.

9. There are four friends Amit, Ram, Rohit and Kirti. In an examination, the sum of their marks is 450. Rohit's Marks is equal to the twice the sum of Ram and Kirti's marks. Amit marks are equal to Rohit's marks.The person who gets 95 marks and above it will go to next level. Who are the people which go to next level examination?

Answer: Amit & Rohit
Let a, b, c, and d is the marks of Amit, Ram, Rohit and Kirti respectively.
Clearly, we have :
a+b+c+d=450….(i)
c=2(b+d) ….(ii)
a=c….(iii)
from i & ii
a+c+c/2 =450; (we have a=c)
c+c+c/2= 450
5/2c=450
c=180;
a=180
b+d= c/2= 180/2=90
a, c is more than 95, b, d is not more than 90.
Therefore, Amit and Rohit will go to next level examination.

10. Two bus tickets from city A to B and three tickets from city A to C cost Rs. 77 but three tickets from city A to B and two tickets from city A to C cost Rs. 73. What are the fares for cities B and C from A?

Ans. 13

Let Rs. x be the fare of city B from city A and Rs. y be the fare of city C from city A.
Then, 2x+3y=77 .....(i) and
3x+2y=73 .....(ii)
Multiplying (i) by 3 and (ii) by 2 and subtracting, we get: 5y=85 or y=17.
Putting y=17 in (i), we get: x=13.