1

Given:
Score is a two digit number - $S=10x+y$ (as the score was between 10 and 99);
Bonus - $B=2x$.
Question: is $2x>\frac{17}{100}(10x+y)$? --> is $30x>17y$?

(1) The base score of the test was between 50 and 90 --> $5\leq x\leq 9$ --> the range of $30x$ is $150\leq 30x\leq 270$ and the range of $17y$ is $0\leq 17y\leq 153$ (as y can be from 0 to 9). Hence $30x$ may or may not be more than $17y$. Not sufficient.

(2) Mrs. T added 16 bonus points to the last test she graded --> $B=2x=16$ --> $x=8$ --> $30x=240$. Max value of $17y=153$ (as max value of y is 9), hence $30x$ is more than $17y$. Sufficient.

Answer: B.

2

C is not correct.

You can solve this question algebraically but I think simple analysis would be better.

(1) The amount of the bill was between $15 and $50 --> 15<bill<50. Now if the bill was 20$ then the tip would be 2*2=$4 (2 times tens digit) so more than 0.15*20=$3 (15% of the bill) but if the bill was 29$ then the tip would still be 2*2=$4 but in this case less than 0.15*29=~$4.5. Not sufficient.

(2) The tip calculated by the martin was $8 --> Tip=$8 means that: 40<=bill<50 (so that the tens digit of the bill to be 4). Now, even if the bill was exactly $50 (uppert limit), 15% of it would be 0.15*50=$7.5 and it's still less than $8. So the answer to the question is YES: the tip (8$) was greater than 15% of the bill. Sufficient.

Answer: B.

3

This is classic C-trap question. C-trap questions are the questions which are obviously sufficient if we take statements together. When we see such questions we should become very suspicious.

Let # of full-size car be F and # of compact cars be C. Question: C=?

(1) The agency owns 7 total cars --> F+C=7. Clearly insufficient to get C.

(2) The agency paid $66,000 for its cars --> 10,000F+9,000C=66,000 --> 10F+9C=66. Here comes the trap: generally such kind of linear equations (ax+by=c) have infinitely many solutions for x and y, and we cannot get single numerical values for the variables. But since F and C represent # of cars then they must be non-negative integers and in this case 10F+9C=66 is no longer simple linear equation it's Diophantine equation (equations whose solutions must be integers only) and for such kind on equations there might be only one combination of x and y (F and C in out case) possible to satisfy it. When you encounter such kind of problems you must always check by trial and error whether it's the case.

Now, it's quite easy to check whether 10F+9C=66 has one or more solutions. 9C=66-10F so 66 minus multiple of 10 must be multiple of 9: 66 is not a multiple of 9; 56 is not; 46 is not; **36 IS A MULTIPLE OF 9 (F=3 and C=4)**; 26 is not; 16 is not and 6 is not. So only one combination of F and C satisfies equation 10F+9C=66, namely F=3 and C=4. Sufficient.

Answer: B.

4

Basically the question is whether we can distribute 66 birthdays between 12 moths so that January to get 0.

(1) Let 10 months (except March and January) have 6 birthdays each (maximum possible) --> 6*10=60. As in March there was less birthdays than in February than maximum possible for March is 5 --> total 60+5=65, so even for the worst case scenario (maximum for other months) still 1 birthday (66-65=1) is left for January. Sufficient.

(2) Again: let 10 months have 6 birthdays each (maximum possible) --> 6*10=60 + 5 birthdays in March = 65. The same here: even for the worst case scenario (maximum for other months) still 1 birthday (66-65=1) is left for January. Sufficient.

Answer: D.