Quant Session 1

GMAT GRE | TOP ONE PERCENT 99th PERCENTILE CLUB

GMAT at a glance

Quant Section:

21 PS Questions
8 DS Questions (in DI Section)

Quant skills are also used in half of IR Questions
and even in many Verbal (CR) questions

Format of the GMAT™		
	Questions	Timing
Data Insights Data Sufficiency Multi-Source Reasoning Table Analysis Graphics Interpretation Two-Part Analysis	20	45 min.
Quantitative Reasoning	21	45 min.
Verbal Reasoning Reading Comprehension Critical Reasoning	23	45 min.
	Total Time	135 min.

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Standard directions for all Data Sufficiency Questions:

Mark:

A. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
C. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
D. EACH statement ALONE is sufficient.
E. Statements (1) and (2) TOGETHER are not sufficient.

1. How many attendees are at a convention if 150 of the attendees are neither female nor students, one-sixth of the attendees are female students, two-thirds of the attendees are female, and one-third of the attendees are students?

A. 300

B. 450

C. 600

D. 800

E. 900

2. Of the 645 speckled trout in a certain fishery that contains only speckled and rainbow trout, the number of males is 45 more than twice the number of females. If the ratio of female speckled trout to male rainbow trout is 4:3 and the ratio of male rainbow trout to all trout is 3:20, how many female rainbow trout are there?

A. 192
B. 195
C. 200
D. 205
E. 208

3. At least 100 students at a certain high school study Japanese. If 4 percent of the students at the school who study French also study Japanese, do more students at the school study French than Japanese?
   (1) 16 students at the school study both French and Japanese.
   (2) 10 percent of the students at the school who study Japanese also study French.

4. One night a certain motel rented 3/4 of its rooms, including 2/3 of its air-conditioned rooms. If 3/5 of its rooms were air-conditioned, what percent of the rooms that were not rented were air-conditioned?

A. 20%
B. 33.33%
C. 35%
D. 40%
E. 80%

5. In a group of 68 students, each student is registered for at least one of three classes – History, Math and English. Twenty-five students are registered for History, twenty-five students are registered for Math, and thirty-four students are registered for English. If only three students are registered for all three classes, how many students are registered for exactly two classes?

A. 13
B. 10
C. 9
D. 8
E. 7

6. The table gives three factors to be considered when choosing an Internet service provider and the percent of the 1,200 respondents to a survey who cited that factor as important. If 30 percent of the respondents cited both “user-friendly” and “fast response time”, what is the maximum possible number of respondents who cited “bargain prices,” but neither “user-friendly” nor “fast response time?”

Factor	Percent of Respondents
User-friendly	56%
Fast response time	48%
Bargain prices	42%

A. 312
B. 336
C. 360
D. 384
E. 420

7. Before being simplified, the instructions for computing income tax in Country R were to add 2 percent of one's annual income to the average (arithmetic mean) of 100 units of Country R's currency and 1 percent of one's annual income. Which of the following represents the simplified formula for computing the income tax, in Country R's currency, for a person in that country whose annual income is A?

A. $50 + (A/200)$
B. $50 + (3A/100)$
C. $50 + (A/40)$
D. $100 + (A/50)$
E. $100 + (3A/100)$

8. If \$1,000 is deposited in a certain bank account and remains in the account along with any accrued interest, the dollar amount of interest, I, earned by deposit in the first n years is given by $I = 1000\left[\left(1+\frac{r}{100}\right)^n - 1\right]$, where r percent is the annual interest rate paid by the bank. Is the annual interest rate paid by the bank greater than 8%?

(1)The deposit earns a total of \$210 in interest in the first 2 years.

(2) $\left(1+\frac{r}{100}\right)^2 = 1.21$

Tougher Version:

8. If \$1,000 is deposited in a certain bank account and remains in the account along with any accrued interest, the dollar amount of interest, I, earned by deposit in the first n years is given by $I = 1000\left[\left(1+\frac{r}{100}\right)^{n}-1\right]$, where r percent is the annual interest rate paid by the bank. Is the annual interest rate paid by the bank greater than 8%?

(1) The deposit earns a total of \$210 in interest in the first 2 years.

(2) $\left(1+\frac{r}{100}\right)^{2} > 1.15$

Another Tougher Version:

8. If \$1,000 is deposited in a certain bank account and remains in the account along with any accrued interest, the dollar amount of interest, I, earned by deposit in the first n years is given by $I = 1000\left[\left(1+\frac{r}{100}\right)^{n}-1\right]$, where r percent is the annual interest rate paid by the bank. Is the annual interest rate paid by the bank greater than 8%?

   (1) The deposit earns a total of \$210 in interest in the first 2 years.

   (2) $\left(1+\frac{r}{100}\right)^{2} > 1.17$

9. If grapes are 92% water and raisins are 20% water, then how much did a quantity of raisins, which currently weighs 10 pounds, weigh when all the raisins were grapes? (Assume that the only difference between their raisin-weight and their grape-weight is water that has been evaporated during their transformation. Only water evaporates; solid doesn't evaporate.)

A. 100 pounds
B. 25 pounds
C. 46 pounds
D. 92 pounds
E. 146 pounds

10. Joanna bought only $0.15 stamps and $0.29 stamps. How many $0.15 stamps did she buy?

(1) She bought an equal number of $0.15 stamps and $0.29 stamps.

(2) She bought $4.40 worth of stamps.

11. A school's annual budget for the purchase of student computers increased by 60% this year over last year. If the price of student computers increased by 20% this year, then the number of computers it can purchase this year is what percent greater than the number of computers it purchased last year?

A. 33.33%
B. 40%
C. 42%
D. 48%
E. 60%

12. A contractor combined x tons of a gravel mixture that contained 10% gravel G, by weight, with y tons of a mixture that contained 2% gravel G, by weight, to produce z tons of a mixture that was 5% gravel G, by weight. What is the value of x?

(1) $y = 10$

(2) $z = 16$

13. Marta bought several pencils. If each pencil was either a 23-cent pencil or a 21-cent pencil, how many 23-cent pencils did Marta buy?

(1) Marta bought a total of 6 pencils.

(2) The total value of the pencils Marta bought was 130 cents.

14. A portion of a 50% alcohol solution (alcohol mixed with water) is replaced with an equal amount of a 25% alcohol solution. If the resultant is a 30% alcohol solution, what portion of the original solution was replaced?

A. 80%
B. 75%
C. 66%
D. 20%
E. 3%

15. A novelist pays her agent 15% of the royalties she receives from her novels. She pays her publicist 5% of the royalties, plus a yearly fee. Did the novelist pay more to her agent last year than she paid to her publicist?

(1) The publicist's yearly fee is $2,000.

(2) The novelist earned an average of $3,500 in royalties last year on each of her novels.

16. The annual stockholders' report for Corporation X stated that profits were up 10 percent over the previous year, although profits as a percent of sales were down 10 percent. Total sales for that year were approximately what percent of sales for the previous year?

A. 78%
B. 90%
C. 110%
D. 122%
E. 190%

17. A driver paid n dollars for auto insurance for the year 1997. This annual premium was raised by p percent for the year 1998; for each of the years 1999 and 2000, the premium was decreased by 1/6 from the previous year's figure. If the driver's insurance premium for the year 2000 was again n dollars, what is the value of p?

A. 44
B. 12
C. 40
D. 36
E. 50

18. On a certain sight-seeing tour, the ratio of the number of women to the number of children was 5 to 2. What was the number of men on the sight-seeing tour?

1. On the sight-seeing tour, the ratio of the number of children to the number of men was 5 to 11.
2. The number of women on the sight-seeing tour was less than 30.

19. A merchant purchased a jacket for $60 and then determined a selling price that equaled the purchase price of the jacket plus a markup that was 25 percent of the selling price. During a sale, the merchant discounted the selling price by 20 percent and sold the jacket. What was the merchant's gross profit on this sale?

A. $0
B. $3
C. $4
D. $12
E. $15

20. In a demographic study, the population and total income of a certain region were estimated from other data, and both estimates had upper and lower limits. At the time of the estimates, was the per capita income for the region greater than $16,500?
(1) The lower limit for the estimate of the population was 330,000 people.
(2) The lower limit for the estimate of the total income was $5,500,000,000.

21. According to the directions on a can of frozen orange juice concentrate, 1 can of concentrate is to be mixed with 3 cans of water to make orange juice. How many 12-ounce cans of the concentrate are required to prepare two-hundred 6-ounce servings of orange juice?

A. 25
B. 34
C. 50
D. 67
E. 100

22. A construction company was paid a total of $500,000 for a construction project. The company's only costs for the project were for labor and materials. Was the company's profit for the project greater than 150,000?

(1) The company's total cost was three times its cost for materials.

(2) The company's profit was greater than its cost for labor.

23. Six countries in a certain region sent 75 representatives to an international congress, and no two countries sent the same number of representatives. Of the six countries, if country A sent the second greatest number of representatives, did country A send more than 10 representatives?

1. One of the six countries sent 41 representatives to the congress.
2. Country A sent fewer than 12 representatives to the congress.

24. Of the 60 animals on a certain farm, 2/3 are either cows or pigs. How many of the animals are cows?

(1) The farm has more than twice as many cows as pigs

(2) The farm has more than 12 pigs

25. A merchant paid \$300 for a shipment of x identical calculators. The merchant used 2 of the calculators as demonstrators and sold each of the others for \$5 more than the average (arithmetic mean) cost of the x calculators. If the total revenue from the sale of the calculators was \$120 more than the cost of the shipment, how many calculators were in the shipment?

A. 30

B. 28

C. 26

D. 25

E. 24

26. A certain investment grows at an annual interest rate of 8%, compounded quarterly. Which of the following equations can be solved to find the number of years, x, that it would take for the investment to increase by a factor of 16?

A. $16 = (1.02)^{x/4}$
B. $2 = (1.02)^{x}$
C. $16 = (1.08)^{4x}$
D. $2 = (1.02)^{x/4}$
E. $1/16 = (1.02)^{4x}$

27. An investor purchased a share of non-dividend-paying stock for p dollars on Monday. For a certain number of days, the value of the share increased by r percent per day. After this period of constant increase, the value of the share decreased the next day by q dollars and the investor decided to sell the share at the end of that day for v dollars, which was the value of the share at that time. How many working days after the investor bought the share was the share sold, if $r = 100\left(\sqrt{\frac{v+q}{p}} - 1\right)$

A. 2
B. 3
C. 4
D. 5
E. 6

28. The number of antelope in a certain herd increases every year at a constant rate. If there are 500 antelope in the herd today, how many years will it take for the number of antelope to double?

(1) Ten years from now, there will be more than ten times the current number of antelope in the herd.

(2) If the herd were to grow in number at twice its current rate, there would be 980 antelope in the group in two years.

29. If a certain culture of bacteria increases by a factor of x every y minutes, how long will it take for the culture to increase to ten-thousand times its original amount?

(1) $\sqrt[y]{x} = 10$

(2) In two minutes, the culture will increase to one-hundred times its original amount.

30. An investment has been growing at a fixed annual rate of 20% since it was first made; no portion of the investment has been withdrawn, and all interest has been reinvested. How much is the investment now worth?

(1) The value of the investment has increased by 44% since it was first made.

(2) If one year ago $600 had been withdrawn, today the investment would be worth 12% less than it is actually now worth.

1. E
2. D
3. B
4. E
5. B
6. A
7. C
8. D (Alternate version 1 – A | Alternate version 2 – D)
9. A
10. B
11. A
12. D
13. B
14. A
15. E
16. D
17. A
18. C
19. C
20. E
21. A
22. C
23. E
24. C
25. A
26. B
27. B
28. B
29. D
30. B

General Discussion + Agenda for the upcoming class