新东方在线

GRE数学

2.2 分数小数和百分比

MAKE IT EASY

2.2.1 分数和小数

小数的性质

注意：digit是“数字”，即0，1，2，3，4，5，6，7，8，9这是个阿拉伯数字；number是“数”，如898是一个数，由3个digit组成。

* reciprocal为倒数，如the reciprocal of 2 is $\frac{1}{2}$

2.2.1 分数和小数

比例问题

例：Among registered voter in a certain district, the ratio of men to women is 3:5. Of the district currently includes 24,000 registered voters, how many additional men must register to make the ratio 4:5?

2.2.1 分数和小数

无限循环小数

$\frac{1}{4} = 0.25$

$\frac{1}{3} = 0.333\ldots = 0.\overline{3}$

$\frac{1}{7} = 0.\overline{142857}$

2.2.2 百分比

例：How many fifths are in 280%

2.2.3 投资 税收 打折问题

Simple Interest(单利)：计算利息的一种方法。不管期限长短，仅按本金(principal)计算利息，其所生利息不再加入本金重复计算利息。

Compound Interest(复利)：单利的对称。进过一定的期限，将所生利息加入本金再计利息，逐期滚算，俗称“利上滚利”。

2.2.3 投资 税收 打折问题

Simple Interest(单利)=Principal(本金)×Interest Rate(利率)×Time(时间),式中时间单位与利率的时间单位应一致。以单利计算的本金利息和=p(1+n·r)，其中，p为本金，n为时间，r为利率。

Compound Interest(复利)：A=P(1+r)，式中：A为本利和(principal +interest), P为本金，r为利率(rate or percent of interest)，n为期数。

注意：单利与复利计算时，一定要注意单位换算，如是以半年为单位计算复利，还是以三个月未单位计算复利

2.2.4 练习

1. 3×10^4 is greater than 4×10^3 by what percent?

2. s, t, and u are integers, and $10 \leq s < t < u \leq 20$.

Quantity A: $s+\frac{t}{u}$

Quantity B: 11

3. Of the students in a certain group, 22 percent are juniors and 26 percent are seniors.

Quantity A: The ratio of the number of juniors in the group to the number of seniors in the group.

Quantity B: $\frac{4}{5}$

4. In year Y, the population of Colorado was approximately half that of New Jersey, and the land area of Colorado was approximately 14 times that of New Jersey. The population density (number of persons per unit of land area) of Colorado in year Y was approximately how many times the population density of New Jersey?

5. If $0<a<1<b$, which of the following is true about the reciprocals of a and b?

6. Runner A ran $\frac{4}{5}$ kilometer and Runner B ran 800 meters.

Quantity A: The distance that A ran

Quantity B: The distance that B ran

7. Which of the following operations carried out on both the numerator and the denominator of a fraction will always produce an equivalent fraction?
Indicate all such operations.

8. k is a digit in the decimal 1.3k5, and 1.3k5 is less than 1.33.

Quantity A: k

Quantity B: l

9. $\overline{b}$ represents the decimal in which the digit b is repeated without end.

Quantity A: $\overline{0.3}+\overline{0.7}$

Quantity B: 1.0

10. D is the decimal form of the fraction $\frac{4}{11}$.

Quantity A: The 25th digit to the right of the decimal point in D

Quantity B: 4

11. On a certain map, 1 centimeter represents 5 kilometers. On the map, region X has an area of 6.4 square centimeters.

Quantity A: The actual area of region X

Quantity B:150 square kilometers

12. Aisha’ s income in 2004 was 20 percent greater than her income in 2003. What is the ratio of Aisha’ s income in 2004 to her income in 2003?

13. A car dealer received a shipment of cars, half of which were black, with the remainder consisting of equal numbers of blue, silver, and white cars. During the next month, 70 percent of the black cars, 80 percent of the blue cars, 30 percent of the silver cars, and 40 percent of the white cars were sold. What percent of the cars in the shipment were sold during that month?

14. By weight, liquid A makes up 8 present of solution R and 18 percent of solution S. If 3 grams of solution R are mixed with 7 grams of solution S, then liquid A accounts for what percent of the weight of the resulting solution?

15. Alice earns d dollars and has t percent of what she earns deducted for taxes. How much of what she earns does Alice have left after taxes?

16. During a one-year study, biologists observed the number of fish in a certain pond as well as the percent of the fish that were catfish. At the beginning of the year, there were 300 fish in the pond, of which 15 percent were catfish; and at the end of the year, there were 400 fish in the pond, of which 10 percent were catfish. From the beginning of the year to the end of the year, the number of catfish in the pond

17. Geoff used $630 to buy a new guitar. This amount was 15 percent of his earnings last summer.

Quantity A: The amount of Geoff’ s earnings last summer not used to buy the new guitar

Quantity B: $3,570

18. In 2009 the property tax on each home in Town X was p percent of the assessed value of the home, where p is a constant. The property tax in 2009 on a home in Town X that had an assessed value of $125,000 was $2,500.

Quantity A: The property tax in 2009 on a home in Town X that had an assessed value of $160,000

Quantity B: $3,000

19. Emma spent $75 buying a used bicycle and $27 repairing it. Then she sold the bicycle for 40 percent more than the total amount she spent buying and repairing it.

Quantity A: The price at which Emma sold the bicycle.

Quantity B: $140

20. If x>0, which of the following is equal to 1.25 percent of x?

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Thanks

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