GRE Arithmetic Practice Paper 2

Question 1

The maximum mark in an examination is 100 and the minimum is 0. The average mark of seven students such that no two of them have scored the same marks is 88. If the median score is 92 and all the marks are integers, what is the maximum possible difference between the highest and the least mark obtained by these seven students?

A. 11
B. 46
C. 99
D. 54
E. 100

Question 2

The average (arithmetic mean) of two numbers x and y is 15. If x, y, and z are non-negative integers such that x < z < y, what is the minimum possible average of x, y, and z?

A. $10\frac{1}{3}$
B. $10\frac{2}{3}$
C. 15
D. 11
E. 10

Question 3

If the average (arithmetic mean) of 5 positive integers is 11, what is the maximum possible difference between the largest and the smallest of these 5 numbers?

A. 50
B. 44
C. 39
D. 4
E. 20

Question 4

The average weight of the women in a group is 60 kg and that of the men is 72 kg. If the average weight of the group is 68 kg, what is the ratio of women to men in the group?

A. 1 : 3
B. 2 : 3
C. 3 : 2
D. 1 : 2
E. 2 : 1

Question 5

If the median of -10, 29, 6, 11, 31 and x is 20. What is the least possible average of the 6 numbers?

A. $16\frac{1}{3}$

B. $16\frac{2}{3}$

C. $16\frac{1}{6}$

D. 16

E. $11\frac{1}{6}$

Question 6

There are 5 doors to a lecture room. In how many ways can a student enter the room through a door and leave the room by a different door?

A. 10
B. 9
C. 20
D. 625
E. 1024

Question 7

In how many ways can 3 students be selected from a group of 12 students to represent a school in the inter school essay competition

A. 33
B. 12!
C. 1320
D. 220
E. 36

Question 8

How many words can be formed by re-arranging the letters of the word PROBLEMS such that P and S occupy the first and last position respectively?

(Note: The words thus formed need not be meaningful)

A. 8
B. 2
C. 82
D. 8! - 2!
E. 6!
F. 8! - 2*7!
G. 6! * 2!

Question 9

GRE Quantitative Comparison Practice Question

Quantity A	**Quantity B**
The probability that a word selected from the set of all rearrangements of the letters of the word "Math" results in "Math"	The probability that a word selected from the set of all rearrangements of the letters of the word "Good" results in "Good"

A. Quantity A is greater
B. Quantity B is greater
C. The two quantities are equal
D. The relationship cannot be determined from the information given

Question 10

In how many rearrangements of the letters of the word SCINTILLATING will no two 'I's appear together?

A. ${}^{11}C_3 * 13!$

B. $\frac{10!}{2!*2!*2!}$

C. ${}^{11}C_3 * 3! * 10!$

D. ${}^{11}C_3 \frac{10!}{2!*2!*2!}$

E. $\frac{11!}{2!*2!*2!}$

Question 11

How many squares are there in a chess board?

A. 64
B. 65
C. 4096
D. 1296
E. 204

Question 12

What is the probability that two squares(smallest dimension) selected randomly from a chessboard will have only one common corner?

A. $\frac{7}{288}$

B. $\frac{7}{144}$

C. $\frac{7}{126}$

D. $\frac{7}{72}$

E. $\frac{2}{63}$

Question 13

8 directors, the vice chairman and the chairman are to be seated around a circular table. If the chairman should sit between a director and the vice chairman, in how many ways can they be seated?

A. 9!
B. 7! * 2
C. 9! * 2
D. 8! * 2
E. 8!

Question 14

Ms Li works at an office where the work timing is from 9:00 AM to 6:00 PM. 25% of a year she goes late to office and 35% of a year she leaves early from office. If P is the probability that she works at office the entire day then

A. $0.25 \leq P \leq 0.35$
B. $0.25 \leq P \leq 0.65$
C. $0.4 \leq P \leq 0.65$
D. $0.35 \leq P \leq 0.4$
E. $0.1 \leq P \leq 0.6$

Question 15

For which of the following events will the number of outcomes exceed 50?

Indicate <u>all</u> such events.

A. The number of outcomes in which at least three heads appears in 6 consecutive tosses of a fair coin.

B. The number of outcomes in which the sum of the digits that appear on the facing side is odd when a fair die rolled thrice.
C. The number of outcomes in which the two cards drawn from a pack of well shuffled cards are both red and face cards.
D. The number of outcomes in which the vowels appear together when the letters of the word 'PRIORITY' are reordered.
E. The number of ways of posting 6 different letters in 2 different post boxes such that at least one letter is posted in each of the boxes.
F. The number of ways of selecting at least one Indian and at least one American for a debate from a group comprising 3 Indians and 4 Americans and no one else.

Question 16

A sector of a circle of radius 5 cm is recast into a right circular cone of height 4 cm. What is the volume of the resulting cone?

A. $12\ \pi\ cm^3$
B. $100\ \pi\ cm^3$
C. $33\ \pi\ cm^3$
D. $32\ \pi\ cm^3$
E. $4\ \pi\ cm^3$

Question 17

A cylindrical vessel is filled with water up to some height. If a sphere of diameter 8 cm is dropped into the cylinder, the water level rises by half of the initial level. Instead, if a sphere of diameter 16 cm is dropped, the water level rises to a height h_2. What percentage of this new height h_2 is the initial level of water?

A. $33\frac{1}{3}\%$

B. 40%

C. 20%

D. 25%

E. $16\frac{1}{6}\%$

Question 18

Chord AC at a distance of 7 cm from the center of a circle subtends an angle of 120 degrees at the center. What is the area of major segment?

A. $410\frac{1}{3} + 7\sqrt{3}$ cm^2

B. $410\frac{1}{3} + 49\sqrt{3}$ cm^2

C. $1232 + 49\sqrt{3}$ cm^2

D. $1232 + 7\sqrt{3}$ cm^2

E. $410\frac{2}{3} + 49\sqrt{3}$ cm^2

Question 19

The area for which of the following will necessarily be more than 50 square units.

Indicate **all** such expressions

A. Circle whose circumference is 22 units
B. Parallelogram whose adjacent sides measure 20 units and 10 units.
C. Rhombus whose perimeter is 52 units.

D. Rectangle whose perimeter is 50 units.
E. Square whose perimeter is 32 units.
F. Right triangle whose hypotenuse measures 17 units

Question 20

A straight line 4x + 3y = 24 forms a triangle with the coordinate axes. What is the distance between the orthocentre of the triangle and the centre of the circle that circumscribes the triangle?

A. 10 units
B. 5 units
C. 13 units
D. 12 units
E. 9 units