
1 The distance of the moon from the earth is about (400 000 k m). But when the moon was born, its distance from the earth was much smaller: just about (20 000 k m). Now the angular size of the moon from the earth is 0.5° . What has been the angular size of the moon from the earth, when the moon was born?

2 The dimensions of mass, length, and time are denoted by M , L , and T , respectively. The angular momentum is the cross product of the position and the linear momentum. The linear momentum is the product of the mass and the velocity. What is the dimension of (angular momentum divided by energy)?

3 The side lengths of a rectangle are 5 and 12 units. How many units is the length of a diagonal of the rectangle?

4 The plot of temperature in the Fahrenheit scale versus temperature in the Celsius scale is a straight line. 0 degrees Celsius is 32 degrees Fahrenheit, while 100 degrees Celsius is 212 degrees Fahrenheit. There is a number x so that x degrees Celsius is x degrees Fahrenheit. What is x ?

5 Keep only the first two right digits in your student number, and denote it by x . This is a number less than 100. Denote the square of x by y . Denote the first right digit in y by z . This is a number less than 10. What is z ?

6 Good luck

Please write the answers in boxes and return only the answer sheet.

name: Mohammad

family name: Khorrami

student number: 0

1

10°

2

T

3

13

4

-40

5

0	1	2	3	4	5	6	7	8	9
0	1	4	9	6	5	6	9	4	1