**SENIOR MATHS QUIZ**

70] A garden centre sales Ten different varieties of roses. A gardener wishes to buy eight different roses. Calculate the number of ways she can make a selection.

**ANSWER:** 45 different ways

71] The mean of the numbers 2, 6, x and 12 is 6. Find the value x.

 **ANSWER:** 4

72] A rectangular piece of paper measuring 37 x 48 cm is cut into pieces measuring 5 x 5 cm. What is the largest number of whole squares that can be cut out

 **ANSWER:** 63

73] Differentiate xy = 1 explicitly

 **ANSWER:** -x -2 or $\frac{-1}{x^{2}}$

74] The angle of depression from point A to B is 68o. What is the bearing of A from B?

 **ANSWER:** 022o

75] A Camera is bought at K 275, 000 inclusive of a 10% sales tax. Find the sales tax.

**ANSWER:** k 25, 000

76] The ratio A : B is 2 : 5 and the ratio of B : C is 3 : 8. Find the ratio of A : C.

 **ANSWER:** 3 : 20 ( accept 6 : 40)

77] 16 workers can build a wall in 25 days. How many workers are needed to complete the wall in 10 days.

 **ANSWER:** 40 days

78] How many proper subsets are there in a set with 6 elements

 **ANSWER:** 62

79] How many electric poles can be erected over a distance of 30 meters if they are put 3 meters apart. ( one attempt only)

 **ANSWER:** 11

80] If x is an odd number, find in terms of x the sum of the next two even numbers

 **ANSWER:** 2x + 4.

81] It takes 2 hours for a plane to cover a distance of 3000km. A plane leaves point X at 02 hours and arrives at Y at 23 hours. Find the distance between X and Y.

 **ANSWER:** 31, 500 km

82] If 3, 4, x and 13 in that order, a medium of 6. Find the value of x.

**ANSWER:** 8.

83] The volume of two similar cylinders are in the ratio 27 : 8. Find the ratio of area of the two cylinders.

 **ANSWER:** 9 : 4 or 9/4

84] What do we call a point with three reference planes.

 **ANSWER:** A point in space

85] What is the difference between latitude 60o N and 13o S (one attempt only)

 **ANSWER:** 73o. ( No direction to be mentioned)

86] How many seconds are there in one day?

 **ANSWER:** 86, 400 seconds.

87] The transformation T maps the negative X – axis onto the positive y – axis. If T is a reflection, find the equation of the mirror line.

 **ANSWER:** y = -x or –y = x

88] Evaluate log 100, 000

 **ANSWER:** 5

89] Find the absolute value of 2x – 8 if x = 3.

 **ANSWER:** 2

90] At what point does the line y = 2x and 2x – 3y = 8 cross each other?

 **ANSWER:** (-2, -4)

91] What is the asymptote of y = $\frac{1}{2x -1 }$?

 **ANSWER:** x = $\frac{-1}{2}$

92] A farmer has twice as many goats as cows and half as many pigs as cows. If he has 45 pigs on his farm, how many animals does he keep?

 **ANSWER:** 315

93] What do we call the locus of points equidistant from a fixed point in three dimension?

 **ANSWER:** sphere

94] Find the derivative of ln f(x)

 **ANSWER:** $\frac{f^{'}(x)}{f(x) }$

95] What is the remainder when 4x2 + 2x + 1 is divided by x + 2

 **ANSWER:** 21

96] Find the gradient $ \frac{x}{4} $- $\frac{y}{3 }$ = 1

 **ANSWER:** $\frac{3}{4}$

97] Given that 2tan 2x = 2, find the value of x.

 **ANSWER:** 22.5o

98] A horizontal force of 0.5 acts on a body of mars 0.2 kg. There is a frictional force 0.2 N opposing the first force. What acceleration will be produced?

 **ANSWER:** 1.5 m/s-2

99] How many minutes does it take for the minutes hand of a clock to turn through 216o.

 **ANSWER:** 36 minutes

100] Given that log3 ( x – 1) = 2. Find x

 **ANSWER:** 10.

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