**Fiji Mathematics Team Competition – Final**

**Form 7 - 2013**

F7/1 There are 2 girls and 6 boys playing a game. How many additional girls must join

the game so that of the players are girls?

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| |  | | --- | | F7/2 The sum 1 + 3 + 5 + *…..* + 997 + 999 is the square of what number? | |  | |  | |
|  |
|  |

F7/3 what is the sum of the values of that satisfy the equation?

F7/4 Three consecutive odd numbers add up to 375. Find the difference between the biggest and the

smallest numbers.

F7/5 A classroom has a rectangular array of desks. A students notices that there are three desks to

her left, five desks in front of her and two behind her. How many desks are in the room?

F7/6 A square is surrounded by four congruent rectangles. If each of the rectangles has perimeter of

18 cm, what is the total sum of the area of the four rectangles and the interior square?



F7/7 An army of ants is organizing a peace march across a room. If they form columns of 8 ants there are 4 left over. If they form columns of either 3 or 5 ants there are 2 left over. What is the smallest number of ants that could be in this army?

F7/8 The number in an empty square box is found by adding the two numbers in the row directly above. What is the value of x?

5

8

4

x

13

39

7/9 You own thirteen pairs of socks, all different and all of the socks are individually jumbled in a

drawer. One morning you rummage through the drawer and continue to pull out socks until you have a matching pair. How many socks must you pull out to guarantee having a matching pair?

F7/10 The arithmetic mean of a set of 50 numbers is 32. The arithmetic mean of a second set of 70 numbers is 53. What is the arithmetic mean of the sets combined?

F7/11 A boy rows up a river from *A* to *B*, against the current, taking 30 minutes. Rowing back from *B* to *A*, with the current, takes him 20 minutes. If there was no current, how long (in minutes) would it take him to row from *A* to *B* and back?

F7/12 Determine the radius of the circle inscribed in the right angle triangle.

13 cm

5cm

12 cm

F7/13 Two white and eight grey seagulls were flying over a river. Suddenly, they all randomly sat

down at the bank forming a line. What is the probability (in fraction form) that the two white seagulls sit side by side?

F7/14 Two squares of side length 1unit have a vertex of one at the center of the other. What is

the smallest possible value for the area of their intersection?

F7/15 A 9 by 9 by 9 wooden cube is formed by gluing 93 = 729 small unit cubes. What is the greatest number of unit cubes that can be seen(any part) from a single viewpoint?

F7/16 **.** The sum of the ages of three brothers is 73.

Tom is the oldest of the brothers, but he is less than 40 years old.

The product of Tom’s age and Michael’s age is 750.

The difference between Tom’s age and Don’s age is 7 more than the difference between Tom’s age and Michael’s age.

What is Don’s age?

F7/17 Shaun and Tim walk around a circular track. It takes Shaun and Tim respectively 6 and 10

minutes to finish each lap. They start at the same time, at the same point on the track and walk in the same direction around the track. After how many minutes will they be at the same spot again for the first time after they start walking? (not necessarily at the starting point.

F7/18 A pet shop has 1500 pets that are either: cats, dogs or birds. Of this total, 55% are cats and

20% are dogs. A group of cat lovers bought cats only, until just 40% of the remaining pets were cats. How many cats were bought by the cat lovers?

F7/19 At the entrance examination to a university, a student must answer at least 80% of the questions

correctly. So far, Peter has worked on 15 questions. He did not know the answer to 5 of them,

but he was sure that he has answered the other 10 questions correctly. If he does not guess on the five questions he could not answer and answers all the remaining questions in test correctly, he will pass the test at exactly 80%. How many questions are there in the test?

F7/20 To number the pages of his functional analysis notes Ryan needs to use 1890 digits. How

many pages of notes does Ryan have?

Tie Breaker

F7/21 A set of six numbers has an average of 47. If a seventh number is included with the original six

numbers, then the average is 52. The value of the seventh number is

F7/22 Two sides of  each have a length of 20 cm and the third side has a length of 24 cm. What is the area of this triangle?

A

B C