**Fiji Mathematics Team Competition - Zone**

**CLASS 8/FORM 2 – 2013**

F2/1 In the diagram, *AB* is a line segment. What is the value of *x*?



F2/2 There are 36 students in a class. The ratio of boys to girls is 4:5. How many girls are in the class?

F2/3 Ram was given of the 84 cookies in the cookie jar. He ate of the cookies that he was given. How many cookies did Ram eat?

F2/4 In a room there are 2012 people, each wearing either a red or a blue hat. Each person is able to see the hats of everyone in the room except their own. One of the person inside the room, Kelly, surveys the room and counts 1451 red hats. Another person, JP, counts only 1450. How many people are wearing blue hats?

F2/5 Mrs Smith had only a giant chocolate in her refrigerator. She gave each of her grandchild one-twelfth of the chocolate. One third of the chocolate was left. How many grandchildren did she have?

F2/6 The map shows the roads connecting 5 cities. A tour consists of visiting each of the cities by road exactly once. For example, 5, 4, 3, 1, 2 represents a tour. How many different tours are there?

F2/7 What is the greatest common factor of 42, 63, and 105 ?

F2/8 The pupils in class 8 are holding a mock election. A candidate receiving more votes than any other wins. The four candidates receive 83 votes between them. What is the smallest number of votes the winner could receive?

F2/9 The rectangle shown has side lengths of 8cm and 4cm. What is the area of the shaded region?



F2/10 Three planets revolving in the same direction around the same star are in a straight line with the star. The first planet completes one revolution in 4 years, the second one in 6 years and the third one in 9 years. In how many years will the three planets return to their current position?

F2/11 In the addition shown, *P,Q* and *R* each represent a single digit and the sum is 2009. What is the value *of P + Q + R*?

*P Q P*

*+ R Q Q Q*

2 0 0 9

F2/12 As a fund raiser, Tagane High School bought 8-slice pizzas for $6.85 each. The

school bought 55 pizzas and sold every slice. If each slice sold for $1, what was the school’s profit?

F2/13 Andrew has finished the third day of a six-day canoe trip. If he has completed of the trip’s total distance of 168km, how many km per day must he average for the remainder of his trip?

F2/14 A rectangle is 110 cm long and 88 cm wide. The rectangle is to be cut into squares that are all the same size. The entire rectangle is to be used. What is the largest possible area, in cm2, of the squares?

F2/15 Bill the Builder lays 100 bricks an hour, while his dog knocks down 10 bricks every half hour. How long will it take for him to build a 960 brick dog house?

F2/16 During a mathematics test, 18 students answered question 1 correctly, 23 students answered question 2 correctly, 8 of them got them both correct and 11 students answered incorrectly on both questions. How many students took the test?

F2/17 In a dormitory, there are 72 rooms for 131 students. If each room is occupied by either one or two students, how many rooms are occupied by just one student?

F2/18 Find the sum of the three consecutive integers such that 7 times the first is equal to 6 times the third. Restrict the integers to numbers less than 100.

F2/19 Anand and Shiu were given some apples and pears by their grandmother. They had 25 pieces of fruit in their basket altogether. On the way home Anand ate 1 apple and 3 pears and Shiu ate 3 apples and 2 pears. At home they found out that they brought home the same number of pears as apples. How many pears were they given by their grandmother?

F2/20 A box contains 24 identical cubes. How many cubes can be placed in another box

whose dimensions are double that of the original box?

Tie breaker

F2/21 A mouse takes 12 sec to run once around a circular track, whereas another mouse takes 16 sec. The two mice leave the starting line at the same time and end their race 1 minute 40 seconds later. How many times after the start do the two mice find themselves simultaneously at the starting line?

F2/22 How many squares are contained in the following diagram?

