**Fiji Mathematics Team Competition - Zone**

**FORM 3 – 2013**

F3/1 The difference between two positive numbers is 5 and their product is 24. What is the

sum of these two numbers ?

F3/2 Rahil lists the integers from 1 to 20 in increasing order. He then erases the first half of

the integers in the list and rewrites them in order at the end of the second half of the list. Which integer in the new list has exactly 12 integers to its left?

F3/3 A cell phone company offers three different contracts. The basic contract costs

$40 a month. The advanced contract cost 50% more than the basic one. The

professional contract costs 25% more than the advanced contract. What is the

monthly price of the professional contract ?

F3/4 A pair of jeans now on sale for $32 has been reduced by 15% of its original cost. A

sweater sells at 50% of its regular price of $14.50. How much must you pay to buy both the items?

F3/5 The first 12 contestants won an average of $80. The next 20 won an average of $70. What was the average amount won by all 32 contestants?

F3/6 A painter has finished painting 2/3 of a room by 2:00 p.m and 3/4 of the same room by 2:30 p.m. At this rate, when does he finish painting the room?

F3/7 At the start of the week a bookshop had science and art books in the ratio 2:5. By the end of the week, 20% of each type of books were sold and 2240 books of both types were unsold. How many science books were there at the start of the week?

F3/8 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?

F3/9 A fuel tank of a car is 80% full. After traveling some distance, only 30% of that

fuel is left. The tank is then filled to its full capacity by putting in 19 gallons.

What is the full capacity of the tank?

F3/10 If 6 men take 10 hours to plant 80 trees and if it takes two children to do the work of a single man, how many trees will a team of three men and 3 children plant in 5 hours?

F3/11 Marina spent two thirds of her money. Then she lost two thirds of the money that was

left. Four dollars remained. How much money did Marina have in the beginning?

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F3/12 Tony owns a large square garden. A contractor builds

a fence around the garden and builds two divider fences

parallel to the ends, as shown.

If the contractor uses 480 meters of fence, what is the

area enclosed (in square meters)?

F3/13 A mouse lives at the base of a 24-meter high tree. A hawk, sitting on the top of the tree, notices the mouse when the mouse is heading home and is 72 meters from the base of the tree. The hawk plans to dive in a straight line and catch the mouse. If they both travel the same distance, how far from the base of the tree will the hawk catch the mouse?

F3/14 Two angles are supplementary, and one angle is 9 times as large as the other. What is

the size of the larger angle?

F3/15 Five people sit around a circular table. How many different seating arrangements are there? Take note that two seating arrangements are the same if each person is seated between the same pair of people in both arrangements e.g



F3/16 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?

F3/17 Find the area of this isosceles trapezium.



F3/18 Find the largest divisor of 2800 that is a perfect square.

F3/19 A series of seven books was published over time so that one book of the series was

published every 9 years. When the seventh book was published, the sum of the publication years was 13, 601. In what year was the first book published?

F3/20 James travels 60 km per hour going to a neighboring city and 50 km per hour

coming back using the same road. He drove a total of 5 hours away and back.

What is the distance from James’s house to the city he visited? (round your

answer to the nearest km).

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Tie Breaker

F3/21 If each edge of a cube is doubled in length, then by what percent is the surface area

increased by?

F3/22 A box contains 24 identical cubes. How many cubes can be placed in another box

whose dimensions are double that of the original box?