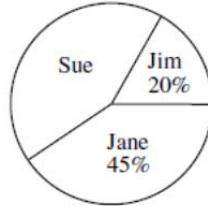


Fiji Mathematics Team Competition - Zone
FORM 5 / YEAR 11- 2014

- F5/1 The pie chart shows a percentage breakdown of 1000 votes in a student election.
How many votes did Sue receive?



- F5/2 Turning a screwdriver 90° will drive a screw 3 mm deeper into a piece of wood.
How many complete revolutions are needed to drive the screw 36 mm into the wood?

- F5/3 The Seniloli family pays each of their five children a weekly allowance. The average allowance for each of the three younger children is \$8. The two older children each receive an average allowance of \$13. What is the total amount of allowance money paid per week?

- F5/4 On my first spelling test, I score one mark out of five. If I now work hard and get full marks on every test, how many more tests should I take for my average to be four out of five correct answers?

- F5/5 Mr Savena purchased an automobile. He added 20% to his cost and sold the automobile to Mr Prasad. Mr Prasad added 25% to the price that he paid and sold the same automobile to Mrs Singh who paid \$6,000. How much did Mr Savena pay for the automobile?

- F5/6 A number less than 20 is doubled and then added to each term of the ratio 3:10. The resulting ratio is equivalent to 3:4. What is the number?

F5/7 What is the value of the fraction $\frac{10 + 20 + 30 + 40 + \dots + 400}{30 + 60 + 90 + 120 + \dots + 1200}$? (give answer in smallest fraction).

F5/8 Six friends are having dinner together in their local restaurant. The first eats there every day, the second eats there every other day, the third eats there every third day, the fourth eats there every fourth day, the fifth eats there every fifth day and the sixth eats there every sixth day. They agree to have a party the next time they all eat together there. In how many days' time is the party?

F5/9 If $20x - 25$ is expressed in the form $a(4x + b)$, then what is the value of $a + b$?

F5/10 A meal made with four eggs and 60 g cheese contains 560 calories. Another meal made with six eggs and 20 g cheese also contains 560 calories. How many calories does one (1) egg contain?

F5/11 The product of two numbers is 504 and each of the numbers is divisible by 6. Neither of the two numbers is 6. What is the larger of the two numbers?

F5/12 Tokasa and Josephine cut two equal rectangles. Tokasa got two rectangles with the perimeter of 40cm each, and Josephine got two rectangles with the perimeter of 50 cm each. What were the perimeters of the initial rectangles?

F5/13 A set of 5 numbers has an average of 13. If a 6th number is included, then the average is 23. What is the value of the 6th number?

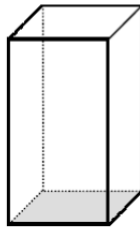
F5/14 Each student in a class of 25 students wrote 2 different tests. It is known that

- 18 students passed the first test.
- 22 students passed the second test.
- No students failed both tests.

How many students passed both tests?

F5/15 If $\frac{a}{b} = 3$ and $\frac{b}{c} = 2$, then what is the value of $\frac{a-b}{c-b}$?

F5/16 A solid right prism has a square base. The height is twice the length of the side of the base. The surface area of this prism is 160 cm^2 . If 1 cm^3 of the prism has a mass of 250 grams, then what is the mass of the prism in kilograms?



F5/17 The average age of a group of 140 people is 24. If the average age of the males in the group is 21 and the average age of the females is 28, how many females are in the group?

F5/18 At a high school $\frac{2}{5}$ of the students are boys and $\frac{1}{3}$ of the seniors are boys. If $\frac{1}{5}$ of the boys are seniors then what fraction of the girls are seniors?

F5/19 John and Sam both leave point A at the same time, heading in exactly opposite directions. If John walks at 4 km/h and Sam walks at 3.5 km/h, find the time (in minutes) it takes for them to be 2.5 km apart.

F5/20 In the alphabet of the Mumbo-Jumbo tribe there are 3 letters. A word is any sequence of these letters which is 4 letters or shorter. How many words are there in the language of Mumbo-Jumbo?

Tie Breaker

F5/21 A kangaroo always jumps 1 m or 3 m long. The kangaroo wants to go exactly 10 m. (We consider $1+3+3+3$ and $3+3+3+1$ as two different possibilities.) How many possibilities are there?

F5/22 When Phillipa is born, her parents buy candles shaped like the ten digits 0 to 9. They buy two of each kind of candle. On each of Phillipa's birthdays they light the appropriate candles on her birthday cake. So, for example, on her first birthday they use just one "1" candle, while on her 10th birthday they use two candles, a "1" and a "0". Each candle can be used only 6 times altogether. Eventually there comes a birthday when both copies of one of the required candles are already used up. How old (in years) does Phillipa become on that birthday?
