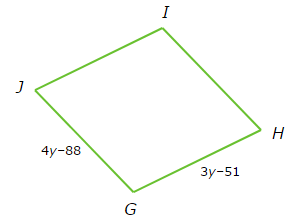
**Fiji Mathematics Team Competition - Finals**

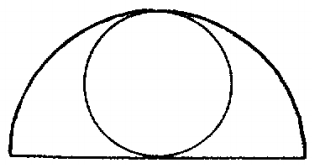
**YEAR 11– 2017**



Y11/1 Quadrilateral GHIJ  is a rhombus. What is the value of y?

Y11/2 Sarah started school at the age of five. She spent one quarter of her life being educated, and went straight into work. After working for one half of her life, she lived for fourteen happy years after retiring.

How old was she when she retired?



Y11/3 A small circle just fits inside a semicircle. What is the ratio of the area of the small circle to the area of the semicircle containing it?

Y11/4 A man’s salary is reduced by 20%. By what percent would his salary then have to be raised to bring it back to the original amount?

Y11/5 Simplify 

Y11/6 Three students are sitting on a school bus. Matt is 4 metres directly behind Harold and 3 metres directly left of Ronna. Matt makes a paper aeroplane and throws it to Harold. Harold throws the aeroplane to Ronna, who throws it back to Matt. How far has the paper aeroplane travelled?

Y11/7 Mrs. Segai has 2 litres of punch that is 18% cranberry juice. She also has plenty of punch that is 76% cranberry juice. How many litres of the 76% punch will she need to add to the 18% punch to obtain a punch that is 47% cranberry juice?

Y11/8 In the number 0.1234512345…(recurring) what is the 2004th digit after the decimal point?

Y11/9 A watermelon, 99% of which is water, was placed in the sun. After a whole day 98% of the water evaporated. What percentage of the original watermelon is left?

Y11/10 Joyti bicycles 8 kilometres west to get from her house to school. After school, she bicycles 15 kilometres north to her friend Laura's house. How far is Joyti's house from Laura's house, measured in a straight line?

Y11/11 Two dice are rolled, each with two black, two green and two red faces. What is the probability that both dice show matching colors?

Y11/12 If three painters can paint three walls in one and a half days, how many walls can six painters paint in nine days?

Y11/13 Solve the equation

Y11/14 If the radius of the base of a cylinder is doubled and its height is tripled, by what number is the volume multiplied?

Y11/15 Find the largest number that always divides the difference of squares of any two consecutive odd numbers.

Y11/16

Y11/17 Find all the three prime numbers the sum of whose digits is 4 and none of whose digits is 0.

Y11/18 Simplify the expression as much as possible.

Y11/19 A deck of 16 cards contains the four aces, four kings, four queens and four jacks. The 16 cards are thoroughly shuffled and my opponent (who always tells the truth) draws two cards simultaneously and at random from the deck. He says ”I hold at least one ace”. What is the chance that he holds two aces in his hand?

Y11/20 If the operation is defined as then calculate .

Tie Breaker

Y11/21 Bob and Russell are coworkers who live in different cities. They both left the office at the same time today. Russell drove directly east towards Yardley at a speed of 63 kilometres per hour. Bob took the bus directly west towards Somerville, travelling 41 kilometres per hour. In how long (in the nearest minute) were the two of them 81 kilometres apart?

Y11/22 Solve for x:



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