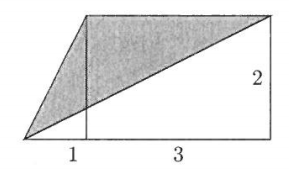
**FMA Team Mathematics Competition - Zone**

**YEAR 9 – 2017**

Y9/1 Ravi was supposed to multiply a number by 10. But by mistake he divided by 10 and got the answer as 24. What would have been the result if he had multiplied the original number by 100?

Y9/2 I spent 30% of my money on bus fares, 20% on my lunch and 15% on a ticket to a show. I have $14.00 left. How much money did I have at the beginning?

Y9/3 The game of Scrabble gives values to letters: A = 1, B = 3, C = 3, D = 2, E = 1, F = 4, G = 2, H = 4, I = 1, J = 8, K = 5, L = 1, M = 3, N = 1, O = 1, P = 3, Q = 10, R = 1, S = 1, T = 1, U = 1,V = 4, W = 4, X = 8, Y = 4, Z = 10. The value of a word is the sum of the values of the letters. For example, ONE = 1 + 1 + 1 = 3. The name of which positive integer has Scrabble score equal to itself?

Y9/4 What is the area of the shaded region?

Y9/5 What is the value of

Y9/6 If , what is the value of (x+3)?

Y9/7 Ravi needs to buy 2 kilograms of Greek yogurt, 3 kilograms of butter and 6 kilograms of cream cheese. How much will he spend?

|  |  |
| --- | --- |
| Plain yogurt | $1.05 / kg |
| Butter | $10.35 / kg |
| Greek yogurt | $ 5.55 / kg |
| Cream cheese | $ 4.80 / kg |

Y9/8 I choose an integer between 0 and 4 inclusive, and you choose an integer between 5 and 16 inclusive. What is the number of distinct sums we can come up with?

Y9/9 In a regular hexagon, the distance from a vertex to the center is 6. What is the perimeter?

Y9/10 Let . What is

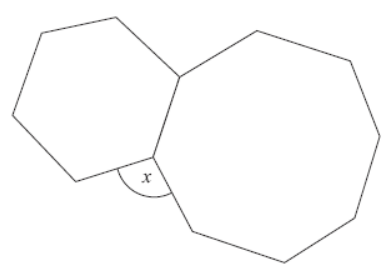
Y9/11 Ninety-six increased by 25% is the same as what number decreased by 25%?

Y9/12 Nine math students take a 100 point test. The average of their scores is 79. If a tenth student takes the test, what is the minimum score that she needs to get to raise the class average score to 81?

Y9/13 Find the integer closest to .

Y9/14 Three circles with radii 1, 2, and 3 are mutually externally tangent. Find the area of the triangle formed by their centers

Y9/15 A collection of coins was shared. Mary received of the coins, Amar received of the coins, and Samantha received of the coins. The remaining 36 coins were given to Peter. How many coins were in the entire collection?



Y9/16 The diagram shows a regular hexagon and a regular octagon. Calculate the size of the angle marked x.

Y9/17 I had 85 candy sticks. I gave away 58. What percentage (to the nearest whole number) do I have left with me?

Y9/18 It takes the Togo Fruit Company about 8 hours to peel, box, and ship 500 cartons of apples. How many cartons can they box and ship in a week? Assume that the company is open 24 hours, 7 days a week.

Y9/19 Arnie, Bender and Cross are three robots. They are weighed two at a time. Here are the results:

A + B = 12 kg

B + C = 14 kg

C + A = 16 kg

How much will all three weigh together?

Y9/20 A square has a Perimeter of P meters and an area of 2P square meters. If P is a positive integer, what is the value of P?

TIE BREAKER

Y9/21 A frog is on the bottom of a 30 meter well. Each day, he has enough energy to jump up 10 meters. Each night, he slips 5 meters downward. How many days will it take for the frog to jump out?

Y9/22 A letter is randomly chosen from the eleven letters of the word MATHEMATICS. What is the probability that this letter has a vertical axis of symmetry?