**FMA-TMC - Final**

**YEAR 9 – 2015**

Y9/1 When a square piece of paper is folded in half, the resulting figure has a perimeter of 24cm. what was the area of the square piece of paper before it was folded in ?

Y9/2 Tim buys 2 kg of almonds at $5.48/kg and 4kg of cashews at a store. If the cost of his purchase is $25.20, then what price did he pay for 1kg of cashews?

Y9/3 Jill likes to buy books from used book stores. During his vacation, he visited six used book stores. At each store, after the second, he bought two more books than he had bought at the previous store. When he returned home, he counted and found that he had bought 52 books. Assuming that he bought same number of books in the first and the second store, how many books did Jill buy from the fifth book store he visited?

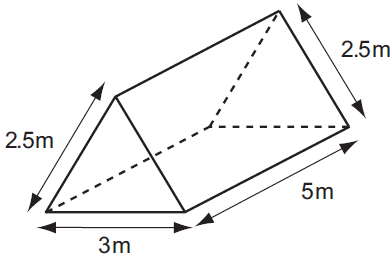
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Y9/4 A student walks from home to school and returns riding on a bus along the same route. The entire trip takes 40 minutes. If the bus travels 7 times as fast as the student can walk, how long would it take the student to ride on a bus in both directions?

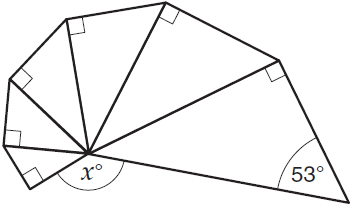
Y9/5 A male fish has 8 stripes and a female fish has 7 stripes. I count 76 stripes on the fish in my tank. What is the ratio (in simplest form) of male fish to female fish?

Y9/6 Mandeep's watch loses two minutes every hour. Adam's watch gains one minute every hour. They both set their watches from the radio at 6:00 a.m. then start their journeys to the airport. When they arrive (at the same time) their watches are 10 minutes apart. At what time (the real time) did they arrive at the airport?

Y9/7 This solid triangular prism needs all its faces painted.The area of each triangular face is 3. What is the total area to be painted in?



Y9/8 A model of how a shell grows can be made using enlarged copies of the same triangle as shown in the diagram below. What is the value of?



Y9/9 On an 80-question test, 48 questions involve algebra and 16 questions are difficult. If 5of the difficult questions involve algebra, how many of the questions are neither difficult nor involve algebra?

Y9/10 Trees are planted 13m apart. How many trees will be needed for a row 4.55km?

Y9/11 The bus leaves for City in 20 minutes from now. However, I have now decided to go by taxi which departs at 12.20. It takes 25 minutes to walk to the taxi stand and that will leave 10 minutes to buy my ticket and a cup of coffee before the taxi departs. At what time does the bus leave for City?

Y9/12 A rectangle can be made longer and narrower without changing its area. If the lengths of one pair of its sides are decreased by 60%, then by what percent should the lengths of its other pair of sides be increased?

Y9/13

36

16 20

7 9 11

3 4 5 6

This is an example of a special number pyramid with starting number 3. Find the starting number if the top number is 28 and the base are consecutive numbers.

Y9/14 I gave my assistant 20 tomatoes to sell at 5 for $1 and 40 to sell at 5 for $2. She sold all 60 at 5 for $1.50. How much income was lost?

Y9/15 A car was sold for $7200. This was a 20% decrease from its original purchase price. What was the cars original purchase price?

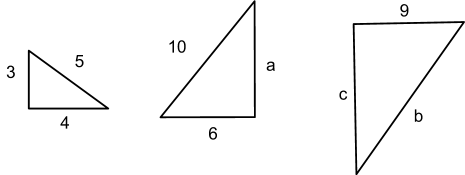
Y9/16 William and Harrison are given the same number of badges to sell at the local fete. William sells 90 % of his badges, while Harrison sells ¾ of his. Between them they raise $ 495, then how much more money did William raise compared to Harrison?

Y9/17 A conservationist studying the effects of rats on an island bird sanctuary needs to estimate the rat population. She captures 50 rats, tags them and lets them go. One week later she captures 100 rats and finds that five of them have been tagged. She is now able to estimate the rat population. What is her estimate?

Y9/18 A farm has a paddock with sheep and ducks in it. There are 70 legs and 24 heads in the paddock. How many ducks and how many sheep are in the paddock?

Y9/19 There are three baskets, a brown one, a redone and a pink one, holding a total of 10eggs. The brown basket has one more egg in it than the red basket. The red basket has 3 eggs less than the pink basket. How many eggs are in the pink basket?

Y9/20 These three triangles are similar. What are the lengths of the missing sides?



Tie Breaker

Y9/21 A goat runs toward a grazing land and back in 15 minutes. Its speed on the way to the grazing land is 5 m/s, and on the way back is 4 m/s. What is the distance to the grazing land (in kilometers)?

Y9/22 If a is 50% larger than c, and b is 25% larger than c, what percent is a larger than b?