

Sample of HSFOL Problems – Year 10

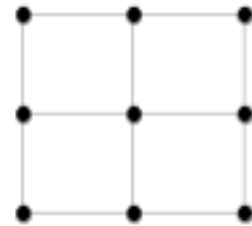
1. What's next in this number pattern? 17, 100, 27, 26, 81, 64, 35, 64, 125, ___

2. If a three-metre tall conical water tank can hold 5 kilolitres of water, what is the diameter of its base to the nearest centimetre?



3. If $\sqrt{x+1} = 3$, what is the value of $(x+1)^2$?

4. A 1×1 square is made using four matches and a 2×2 square, with all the unit squares inside, uses 12 matches as shown. What is the number of matches needed to construct a 25×25 square with all the unit squares inside?



5. To practise her algebra, Sue decided to add five consecutive even numbers where the first number was $3n - 1$. What was the sum of the five numbers?

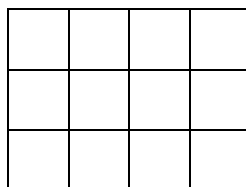
6. You randomly draw a card from a standard pack of playing cards and roll two dice. What is the probability, as a decimal to three places, that you will pick a black jack and that the product of the two dice results is greater than 20?



7. The scores on a maths test with a possible score of 20 by a group of 12 Year 10 students were 17, 20, m , 8, 12, 13, 10, 19, 16, n , 18, 15. If the mean score was 14.5, what could be the median and the mode?

8. What is the last digit in the product of the expression, $3^{25}7^{16}2^{13}$?

9. How many squares and rectangles of all sizes are in this diagram?



10. Mr Money put \$35 000 in a fixed term deposit in his bank for four years at an interest rate of 5.2% per annum with no money to be withdrawn until the end of the term. How much would he have then?