1.   A frog fell into a drain that was 20 cm deep. After one hour, it mastered enough energy to make a jump of 6 cm but it then slid down 4 cm. If it continued in this manner after every one hour, how many hours will it take to get out of the drain?

_____

2.   A shop sells sweets where every 3 sweet wrappers can be exchanged for one more sweet. Kelvin has enough money to buy only 19 sweets. What is the biggest number of sweets that he can get from the shop?

_____

3.   The diagram shows a square being divided into four rectangles. If the sum of the perimeter of the four rectangles is 32 cm, find the area of the square.
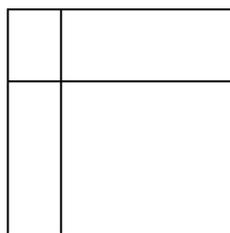
4. Alvin, Betty and Cheryl scored a total of 2014 points during a competition. Betty scored 271 points less than Alvin. Betty scored 3 times as many points as Cheryl. How many points did Betty score?

_____

5. The diagram shows a rectangle with its two diagonals. What fraction of the rectangle is shaded?

_____
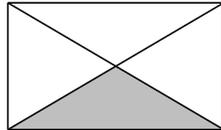
6. How many digits are there before the fifteen 7 of the following number?

3733733373333733333...

7. When Amy, Betty and Cheryl eat out, each orders either beef or chicken.

    a. If Amy orders beef, Betty orders chicken.

    b. Either Amy or Cheryl orders beef, but not both.

    c. Betty and Cheryl do not both order chicken.

    Who could have ordered beef yesterday and chicken today?

_____

8. What are the last 3 digits of the sum $1 + 11 + 111 + \ldots + \underbrace{111\ldots111}_{70 \text{ digits}}$?

_____

9. In the following alphametic, all the different letters stand for different digits. Find the four-digit sum PEEL.

$$
\begin{array}{r}
A\ M \\
+\quad L\ A\ P \\
\hline
P\ E\ E\ L \\
\hline
\end{array}
$$

10. Each figure is formed by surrounding one row of black squares with white squares. In which figure will there be 2014 white squares?
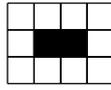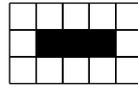
Figure 1   Figure 2   Figure 3

End of paper

	Solutions
1.	8 hours
2.	28
3.	16cm^2
4.	747
5.	$\dfrac{1}{4}$
6.	134
7.	Betty
8.	560
9.	1009
10.	1004