Part B

1. There are 24 hours in a day and 7 days in a week, so the total number of hours in a week is $24 \times 7 = \boxed{168}$.

2. *Solution 1*: The easiest way to solve this problem is probably to draw a picture:

From the picture, we see that there are $\boxed{6}$ soldiers.

Solution 2: If there is a soldier every two metres and the last soldier is ten metres away from the first soldier, there would be $10 \div 2 = 5$ two-metre spaces between the first and last soldiers. There are 4 connecting points between the 5 two-metre spaces, so there are 4 soldiers between the first and last soldiers. Thus, the total number of soldiers is $2 + 4 = \boxed{6}$.

3. First we compute the weight of an individual apple: 300g − 250g = 50g.

Therefore, each apple weighs 50 grams.

Since the basket with 4 apples weighs 250 grams, we can determine how much the empty basket weighs by taking away the weight of 4 apples from this weight:

$$250\text{g} - (4 \times 50\text{g}) = \boxed{50}\text{g}.$$

4. Recall that the area of a square is $l \times l$, where l is the side length of the square. Since $5 \times 5 = 25$, we have $l = 5$.

Hence, the perimeter must be $4 \times 5 = \boxed{20}$, as a square has four equal sides.

5. The given sequence (A B C D E ...) is a group of 5 letters that is repeating. Since $27 \div 5 = 5\text{R}2$, there are 5 complete groups and 2 additional letters at the end. Thus, the 27^{th} letter must be the second letter in the repeating group, which is $\boxed{\text{B}}$.

6. It helps to count in an organized way:

- # of one-shape triangles: 6
- # of two-shape triangles: 5
- # of three-shape triangles: 2
- # of four-shape triangles: 1
- # of five-shape triangles: 0
- # of six-shape triangles: 1

In total, there are $6 + 5 + 2 + 1 + 1 = \boxed{15}$ triangles.

7. Let's assume that different pairs of socks are coloured different colours. In the worst case, Harry will keep taking socks from different pairs. After taking 5 different coloured socks, he will have picked from all of the different pairs and so he will have all five colours. Whatever colour of sock that he picks must be one of the colours that he has already chosen. Therefore, in the worst case, he picks $\boxed{6}$ socks.

8. Notice that pressing a button twice is the same as not pressing it at all, even if you press other buttons in between. So, we can get the fastest solution by trying buttons until all the lights are on, keeping track of the number of times we press each button, and only taking buttons that we press an odd number of times. The unique fastest solution is pressing A, C, and E. Answer: $\boxed{3}$.

   Remark: More formally, this puzzle can be modelled as a system of equations under GF(2) as follows:

$$A + B = 1 \pmod 2 \tag{1}$$
$$A + B + C + E = 1 \pmod 2 \tag{2}$$
$$B + E = 1 \pmod 2 \tag{3}$$
$$B + C + D = 1 \pmod 2 \tag{4}$$
$$C + D = 1 \pmod 2 \tag{5}$$

   We can solve this system via Gaussian elimination:

$$\left[\begin{array}{ccccc|c} 1 & 1 & 0 & 0 & 0 & 1 \\ 1 & 1 & 1 & 0 & 1 & 1 \\ 0 & 1 & 0 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 & 0 & 1 \end{array}\right] \to \left[\begin{array}{ccccc|c} 1 & 1 & 0 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 & 1 & 1 \\ 0 & 0 & 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 1 \end{array}\right] \to \left[\begin{array}{ccccc|c} 1 & 0 & 0 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 1 \\ 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 1 \end{array}\right]$$

   So, the unique solution with the fewest number of presses is A, C, and E.