1. $\boxed{0, 1, 10, 11, 100, 101, 110, 111, 1000, 1001}$

2. $\boxed{10, 11, 101, 111, 1011}$

3. (a) $\boxed{11}$ (b) $\boxed{27}$ (c) $\boxed{45}$ (d) $\boxed{63}$

4. (a) $\boxed{100001}$ (b) $\boxed{110011}$ (c) $\boxed{10011}$ (d) $\boxed{1100100}$

5. We have 5 blanks, because our palindrome is 5 digits. So we have _ _ _ _ _. How many digits do we have for the middle digit? We have two, 0 or 1. We also have two digits for the second digit. We have one digit for the first digit, just 1. So we have (1) (2) (2) _ _. What will be the fourth and fifth digits? We know it's a palindrome, so it reads the same forwards and backwards. So the fourth digit must be whatever is in the second digit spot, and the fifth digit must be whatever the first digit is. So we have (1) (2) (2) (1) (1). We multiply and get $\boxed{4}$.

   Another acceptable answer is $\boxed{8}$, because sometimes we consider 01010_2 to be a five digit number, even though the first digit is 0. So our model would be (2) (2) (2) (1) (1), and we multiply and get $2 \cdot 2 \cdot 2 \cdot 1 \cdot 1 = 8$.

6. A byte has 8 bits in a row. We are given that the first bit represents whether it is positive or negative. The rest of them are used to write the binary number. So for instance, the number 01100110_2 is $2^6 + 2^5 + 2^2 + 2^1 = 64 + 32 + 4 + 2 = 102$. Since the first bit is 0, it means its positive. However, 11100110_2 means -102, because the first bit is 1.

   So let's find the smallest and largest numbers that can be represented in a byte. The largest is the greatest positive number. This is 01111111_2, which is 127. The smallest is the largest negative number, which is $11111111_2 = -127$. $\boxed{\text{-127, 127}}$

7. This problem does not say that the the first bit makes the number positive or negative. So we will assume that the smallest number is $0000\ 0000\ 0000\ 0000_2$ or 0 (I put spaces to make it easier to see), and the largest is $1111\ 1111\ 1111\ 1111_2$, which is $2^15+2^14+\ldots+2^2+2+1 = 2^16-1 = 65536-1 = 65535$. So the range of numbers is $\boxed{[0,65535]}$.

8. $888_{10} = 2^9 + 2^8 + 0 \cdot 2^7 + 2^6 + 2^5 + 2^4 + 2^3 + 0 \cdot 2^2 + 0 \cdot 2^1 + 0 \cdot 2^0 = \boxed{1101111000_2}$

9. $8\ GB \times \frac{2^{10}\ MB}{1\ GB} \times \frac{2^{10}\ KB}{1\ MB} \times \frac{2^{10}\ B}{1\ KB} = 8 \cdot 2^{10} \cdot 2^{10} \cdot 2^{10}\ B = 2^3 \cdot 2^{10} \cdot 2^{10} \cdot 2^{10}\ B = 2^{3+10+10+10}\ B = \boxed{2^{33} \text{ bytes}}$

10. For these two points, if you did the work, you got credit.

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