1. $\boxed{a_{101} = 815}$

2. $\boxed{d = 2, a_1 = 7}$

3. (a) $\boxed{a_1 = 5, d = 3}$ (b) $\boxed{5, 8, 11, 14, 17}$ (c) $\boxed{62}$ (d) $\boxed{a_{100}}$

4. We are given $a_1 = \$5100$, $d = \$75$, and $a_n = \$7200$. Now we must solve for n. We know the arithmetic sequence formula is $a_n = a_1 + (n-1)d$, so substituting gives us $7200 = 5100 + (n-1)75$. Solve:

$$\begin{aligned} 7200 &= 5100 + (n-1)75 \\ 2100 &= (n-1)75 \\ 28 &= n - 1 \\ n &= \boxed{29} \end{aligned}$$

5. $\boxed{288}$

6. For the sequence of odd numbers, $a_1 = 1$ and $d = 2$. The sum formula for an arithmetic series is $\frac{n}{2}(2a_1 + (n-1)d)$. We want the sum to be equal to or greater than 1,000,000. So we set up the following equation and solve for n:

$$\begin{aligned} \frac{n}{2}(2a_1 + (n-1)d) &\geq 1,000,000 \\ \frac{n}{2}(2 \cdot 1 + (n-1)2) &\geq 1,000,000 \\ \frac{n}{2}(2 + 2n - 2) &\geq 1,000,000 \\ \frac{n}{2}(2n) &\geq 1,000,000 \\ n^2 &\geq 1,000,000 \\ n &\geq 1,000 \end{aligned}$$

So we must add at least $\boxed{1000}$ odd numbers until the total reaches one million.

7. $\boxed{\frac{155}{3}, \frac{118}{3} \text{ or } 51\frac{2}{3}, 39\frac{1}{3}}$

8. Here $n = 10,000$, $a_1 = 246$, and $d = 261 - 246 = 15$. So we use the sum formula: $\frac{n}{2}(2a_1 + (n-1)d) = \frac{10,000}{2}(2 \cdot 246 + 9,999 \cdot 15) = 5,000(492 + 149,985) = \boxed{752,385,000}$

9. The first term of this sequence is $a_1 = 6$, $d = 3$, and the last term of the sequence is $a_n = 261$. Find out what term n is by solving the arithmetic sequence equation: $a_n = 261 = a_1 + (n-1)d = 6 + (n-1)3 \Rightarrow 255 = 3(n-1) \Rightarrow 85 = n - 1 \Rightarrow n = 86$. Use the sum formula: $\frac{n}{2}(a_1 + a_n) = \frac{86}{2}(3 + 261) = \boxed{11,352}$

10. $\boxed{10,100}$