

Patterns & Sequences Key

1) Answer: $\frac{3}{90}$ $\frac{4}{61}$ $\frac{5}{52}$ $\frac{6}{63}$ $\frac{7}{94}$ $\frac{8}{46}$ $\frac{9}{18}$ $\frac{10}{1}$
(square of the number switched around)

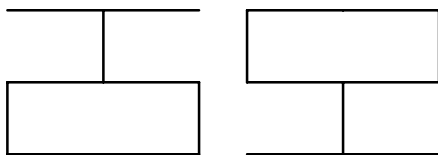
2) Answer: J7 , F7 , M5 , A5 , M3 , J4 , J4 , A6 , S9 , O7 , N8 , D8
(month and number of letters in the name)

3) Answer: 8 , 5 , 4 , 9 , 1 , 7 , 6 , 3 , 2 , 0 (alphabetical order)

4) Answer: 1-3 , 2-3 , 3-5 , 4-4 , 5-4 , 6-3 , 7-5 , 8-5
(number and number of letters in its name)

5) Answer: O , T , T , F , F , S , S , E , N , T
(first letter of the numbers one, two, three, etc.)

6) Answers:



(reflections of the numbers 1, 2, 3, 4, and 5
Source: the Simpson's TV show)

7) Answer: 609 (the numbers that look the same upside down or right side up)

- 8) Answer: 55 (previous term's tens digit increases by 1 and unit's digit decreases by 1)
- 9) Answer: 8 (product of the previous term's digits)
- 10) Answer: 13 (previous term's tens digit squared plus units digit squared)
- 11) Answer: 6 (the sequence corresponds to the number of line segments in each of the digital numbers and 9 is composed of 6 segments)
- 12) Answer:
2, 3, 10, 12, 20, 21, 22, ..., 39, 200, 201, 202, ..., 399, 2000, 2001, 2002, ...
(numbers starting with T)
- 13) Answer:
6, 7, 16, 17, 60, 61, 62, ..., 79, 600, 601, 602, ..., 799, 6000, 6001, 6002, ...
(numbers starting with S)
- 14) Answer: 11^2 (the square of each term - 698896, 12321, 10201, 676, 484, 121 - is a palindrome; it is the same number whether read forwards or backwards.)
- 15) Answer:
1, 11, 21, 1211, 111221, 312211, 13112221, 1113213211, 31131211131221, ..
(this is recursive where the next term is derived from the previous term;
read 2nd term as: one 1, read 3rd term as: two 1's,
read 4th term as: one 2 & one 1, etc.)