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| --- | --- |
| **1. Computer Number Systems**    3A9B16  = 0011 1010 1001 10112  = 0 011 101 010 011 0112 grouping by three  = 3 5 2 3 3 8 | **1.** 352338 or 35233 |
| **2. Computer Number Systems**  328 = 26  10112 = 11  35210 = 352  AF16 = 175  So 328 + 10112 + 35210 + AF16  = 26 + 11 + 352 + 175  = 564  But 564 = 23416 | **2.** 23416 or 234 |
| **3. Recursive Functions**  The original T has 2 segments. The next step adds 3 more segments for a  total of 5. The next step adds 6 segments for a total of 11. Next 12  segments are added for 23. The sequence formed is:  2, 5, 11, 23, 47, …, 3\*2n-1-1, …  The 7th term would be 3\*26-1 = 191 | **3.** 191 |
| **4. Recursive Functions**  =  =  = 522 + 3 = 525  =  =  = 519 + 3 = 522  =  =  = 2\*262−5 = 519  =  =  = 259 + 3 = 262  =  =  = 2\*132−5 = 259  = 11\*11+11= 132 Now substitute backwards. | **4.** 525 |
| **5. What Does This Program Do?**  The table contains the values of a, b, c, d, e, and f after each line.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | a | b | c | d | e | f | | 1 | 2 | 3 | 4 | 4 | 6 | | 1 | 2 | 3 | 2 | 4 | 6 | | 12 | 2 | 3 | 2 | 4 | 6 | | 12 | 4 | 3 | 2 | 4 | 6 | | 12 | 4 | 2 | 2 | 4 | 6 | | 16 | 4 | 2 | 2 | 4 | 6 | | 16 | 4 | 4 | 2 | 4 | 6 |   (b \* c) \* (f + d) / a / 2 \* d - c + e ↑ (b - 2 \* d)  = (4 \* 4) \*(6 + 2) / 16 / 2 \* 4 - 4 + 4 ↑ (4 - 2 \* 2)  = 16 \* 8 / 16 / 2 \* 4 - 4 + 40  = 128 / 16 / 2 \* 2 - 4 + 1 = 8 / 2 \* 2 - 4 + 1 = 5 | **5. 5** |