


(10/10)

Mark each of the following statements as true or false.

- F 1. The common difference for the arithmetic sequence 10, 8, 6, 4 is 2.
- T 2. The number 30 in base-2 is 11110. $16 \cdot 8 \cdot 4 \cdot 2 \cdot 1$
 $2^4 \cdot 2^3 \cdot 2^2 \cdot 2^1$ 11110
- F 3. The number of terms in the arithmetic sequence 6, 11, 16..., 101 is 19. $\frac{95}{5} + 1 = 20$
- T 4. The arithmetic series $3 + 7 + 11 + \dots + 99$ can be written in sigma notation as $\sum_{n=0}^{24} (4n + 3)$.
- F 5. The sum of the arithmetic series $1 + 2 + 3 + \dots + 100$ is 5000.
- T 6. The sum of the interior angles of a hexagon is 720° . $4 \times 180^\circ$ 
- T 7. The series $\sum_{k=1}^{10} 2k$ has sum 110. $2 + 4 + \dots + 20 = 22 \times 10 \times \frac{1}{2} = 110$
- T 8. The general term of the sequence defined recursively by $u_n = u_{n-1} + 2$ and $u_1 = 1$ is $u_n = 2n - 1$. $7 \times 11 \times 13$ 1. 3. 5. 7. 9.
- F 9. The numbers 1001 and 583 are relatively prime. 11×53
- T 10. The sum of the series $100^2 - 99^2 + 98^2 - 97^2 + 96^2 - 95^2 + \dots + 2^2 - 1^2$ is 5050.
 $(100 + 99)(100 - 99)$
 $= 100 + 99$
 $\frac{(100 + 1) \times 100}{2} = 50 \times 101$
 $= 5050$