

1. For $a=5, d=3$, find u_8 .
- _____
2. Find the coefficient of x^2 in $(1+2x)^5$.
- _____
3. Evaluate $4!$.
- _____
4. For $u_1=1$ and $u_{(n+1)}=u_n/2+3$, find u_2 .
- _____
5. Evaluate the sum of $(2k-1)$ from $k=3$ to 7 .
- _____
6. A noninteger solution for an exact term count can be rounded to the nearest integer.
- ☐ True ☐ False
7. A geometric series converges when $|r|<1$, and negative ratios such as $-1/2$ are included.
- ☐ True ☐ False
8. A deposit at the start of a period earns one more period of interest, so the final balance is larger.
- ☐ True ☐ False
9. A sum to infinity exists only when $-1<r<1$.
- ☐ True ☐ False
10. For a negative or fractional power the expansion is an infinite series, valid only for $|x|<1$.
- ☐ True ☐ False

1. **26.0**
- $u_8=5+(8-1)\times 3=26.$
2. **40.0**
- Choose two of five factors and include 2^2 : $C(5,2)\times 4=40.$
3. **24.0**
- $4!=4\times 3\times 2\times 1=24.$
4. **3.5**
- $u_2=1/2+3=7/2=3.5.$
5. **45.0**
- Add $5+7+9+11+13=45.$
6. **False**
- A number of terms must be a whole number; a noninteger solution means no term takes that value.
7. **True**
- True. A geometric series converges when $|r|<1$, and negative ratios such as $-1/2$ are included.
8. **True**
- True. A deposit at the start of a period earns one more period of interest, so the final balance is larger.
9. **True**
- True. A sum to infinity exists only when $-1<r<1$; for $r=2$ the terms grow without limit.
10. **True**
- True. For a negative or fractional power the expansion is an infinite series, valid only for $|x|<1.$