**296.** 1. $\frac{2ar(1-r^{n-1})}{(1-r)^2} + \frac{a[1-(2n-1)r^n]}{1-r}$ and $\frac{a(1+r)}{(1-r)^2}$.

2. $\frac{2a(1-r^n)}{(1-r)^2} - \frac{2anr^n}{1-r}$ and $\frac{2a}{(1-r)^2}$.

3. $\frac{br(1-r^n)}{(1-r)^2} + \frac{ar-(a+nb)r^{n+1}}{1-r}$ and $\frac{(b+a)r-ar^2}{(1-r)^2}$.

**300.** 2. $\Delta_5 = -305$; $\Delta_i = \frac{3}{2}i^3 - \frac{39}{2}i^2 - 2i + 5$.

3. $341^\circ\ 5'\ 10''.9 + (n-1)(1^\circ\ 0'\ 9''.6) - (n-1)(n-2)''$.

4. $495 + 15(n-5) - 5\frac{(n-5)(n-6)}{2}$;

Morning of May 23 or Apr. 24.

**304.** 1. 1. 2. $\frac{a}{b}$. 3. $\frac{m}{p}$. 4. $\frac{1}{a}$. 5. $2a$. 6. $-1$.

**308.** 1. $\sqrt{8} = 2.828427$; $\sqrt{2} = 1.414214$.

2. $1 - \frac{1}{2}x - \frac{1\cdot1}{2\cdot4}x^2 - \frac{1\cdot1\cdot3}{2\cdot4\cdot6}x^3 - \frac{1\cdot1\cdot3\cdot5}{2\cdot4\cdot6\cdot8}x^4 - \text{etc.}$

3. General term $= -\frac{1\cdot1\cdot3\cdot5\cdot7\ldots.2i-3}{2\cdot4\cdot6\cdot8\ldots.2i}x^i$.

4. $(-1)^i\frac{1\cdot3\cdot5\ldots.(2i-1)}{2\cdot4\cdot6\ldots.2i}x^i$. 5. $\left(\frac{m}{i}\right)\frac{1}{x^i}$.

6. $\frac{(-1)(m-1)(2m-1)\ldots.[(i-1)m-1]}{i!\ m^i}$.

7. $1 + 1 + \frac{1-m}{2!} + \frac{(1-m)(1-2m)}{3!} + \frac{(1-m)(1-2m)(1-3m)}{4!} + \text{etc.}$

8. $-\left(\frac{1}{b^3} + \frac{3}{1}\frac{a}{b^4} + \frac{3\cdot4}{1\cdot2}\frac{a^2}{b^5} + \ldots. + \frac{3\cdot4\cdot5\ldots.i+2}{1\cdot2\cdot3\ldots.i}\frac{a^i}{b^{i+3}}\right)$

9. $(-1)^m\left(\frac{1}{x^m} + \frac{m}{x^{m+1}} + \frac{m(m+1)}{1\cdot2x^{m+2}} + \frac{m(m+1)(m+2)}{1\cdot2\cdot3x^{m+3}} + \ldots.\right)$.