You may find some of the following formulas useful:

$$S_n = n\,\frac{(a_1 + a_n)}{2}; \quad S_n = \frac{n[2a + (n-1)d]}{2}; \quad S_n = \frac{a(1 - r^n)}{1 - r}$$

$$\frac{\sin(A)}{a} = \frac{\sin(B)}{b} = \frac{\sin(C)}{c}$$

$$c^2 = a^2 + b^2 - 2ab\cos(C)$$

$$\sin(A + B) = \sin(A)\cos(B) + \cos(A)\sin(B)$$

$$\sin(A - B) = \sin(A)\cos(B) - \cos(A)\sin(B)$$

$$\cos(A + B) = \cos(A)\cos(B) - \sin(A)\sin(B)$$

$$\cos(A - B) = \cos(A)\cos(B) + \sin(A)\sin(B)$$

$$\sin^2(A) + \cos^2(A) = 1$$

$$\sin(2A) = 2\sin(A)\cos(A)$$

$$\cos(2A) = \cos^2(A) - \sin^2(A)$$

$$\sin^2(A) = \frac{1 - \cos(2A)}{2}$$

$$\cos^2(A) = \frac{1 + \cos(2A)}{2}$$

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix}^{-1} = \frac{1}{ad - bc}\begin{bmatrix} d & -b \\ -c & a \end{bmatrix}, \quad ad - bc \neq 0$$