

$$r^k(a_1 + a_2 + a_3 + a_4 + a_5) = a_4 + a_2 + a_1 + a_3 + a_5$$

$$r^k(a_1 + 10d) = a_1 + 40d$$

$$10a_1 + 40d = a_1 + 40d \Rightarrow 10a_1 = a_1 \Rightarrow r^k a_1 = a_1$$

$$\frac{a_2}{a_1} = \frac{a_1 + d}{a_1} = \frac{r^k a_1}{a_1} = r^k$$

$$t_n = t_{n-1} + 10 \Rightarrow t_n - t_{n-1} = 10 \Rightarrow r^k d = 10 \Rightarrow d = 10$$

$$\frac{t_9 - t_1}{t_9 - t_1} = \frac{(t_9 + t_8) \dots (t_2 + t_1)}{(t_9 - t_8) \dots (t_2 - t_1)} = \frac{r + r^2 + \dots + r^9}{r - r^2 + \dots - r^9} = k_0$$

$$d = \frac{r + \sqrt{r} - r(1 - \sqrt{r})}{r^2 + 1} = \frac{r\sqrt{r}}{r^2} = \sqrt{r} = 1$$

$$r + nd = 11 \Rightarrow nd = a$$

$$d = \frac{r^2 - 1}{r^{n-1} + 1} = \frac{10}{r^{n-1}}$$

$$\left. \begin{array}{l} r + nd = 11 \\ nd = n \left(\frac{10}{r^{n-1}} \right) = a \end{array} \right\} \Rightarrow 11n - a = 10n$$

$$\Rightarrow r^n = a \Rightarrow n = r$$

$$a_n + a_{n+k} = a_r + a_{1r} \Rightarrow n + n + k = r + 1r \Rightarrow r^n = 19$$

$$a_n = r^n a_{\frac{n}{r}} \Rightarrow a_n = r^n a_k \Rightarrow a_1 + 10d = r^n a_1 + a_d \Rightarrow r^n a_1 = r^n d$$

$$\Rightarrow a_1 = -d \Rightarrow \underbrace{a_1 + d}_0 = 0$$

$$0 = r^n d$$

Subject

Date : Year _____ Month _____ Day _____

$$a_1 = x_0 \quad a_v = 41 \quad a_v - a_1 = vd = 41 - x_0 = 41 \Rightarrow d = v \quad -1$$

$$a_n = x_0 + (n-1)d = (n-1)v + x_0 = 41 \Rightarrow vn = 1 + v$$

$$\Rightarrow n = 2$$

$$a_n = vn - x \Rightarrow 99 < vn - x < 1000 \Rightarrow 104 < vn < 1004 \quad -2$$

$$1 + \frac{v}{v} < n < 1 + \frac{v}{v} \Rightarrow 104 < n < 1004 \rightarrow \frac{1004 - 104}{1} + 1 = 901 \quad -3$$

$$a_{n+1} + a_{n+v} + a_{n+w} = -9n + 12$$

$$\underline{n=4} \rightarrow a_v + a_{11} + a_9 = 3a_1 = -9 \times 4 + 12 = -24 \Rightarrow a_{11} = -1$$

$$\underline{n=10} \rightarrow a_{14} + a_{1v} + a_{11} = 3a_{1v} = -9 \times 10 + 12 = -87 \Rightarrow a_{1v} = -29$$

$$a_1 + a_{1v} = -29 + (-1) = -30$$

$$10 \quad \begin{matrix} v^x - 1, & v^{x+1}, & v^{2x} - w \\ \parallel & \parallel & \parallel \end{matrix} \quad -4$$

$$a + vd, \quad a + vd, \quad a + vd \quad a_{11} - a_1 = vd = v^{x+1} - (v^x - 1) = v^x + 1$$

$\downarrow$
+vd

$$a_{1w} - a_1 = vd = v^{2x} - v^{x+1} - w$$

$$v^{2x} - v^{x+1} - w = v^x + 1 \Rightarrow v^{2x} - w \times v^x - x = 0 \Rightarrow (v^x - x)(v^x + 1) = 0$$

$$v^x = x \Rightarrow x = v \Rightarrow a_w = w, \quad a_1 = 1, \quad a_{1w} = 1w$$

$$15 \quad a_v + a_1 + a_{1w} = v + 1 + 1w = vk$$

$$a_{10} - a_{1v} = d \Rightarrow -vd = d \Rightarrow d = -vd \quad -5$$

$$+ a_{10} + a_{1v} = vd$$

$$20 \quad va_{10} = v_0 \Rightarrow a_{10} = 10 \Rightarrow a_{1v} = vd - 10 = 10$$

$$a_{v1} = a_{10} + 11d = 10 - vd \times 11 = -11vd$$