

$\left. \begin{aligned} a_r = t_1 &= a_w \\ a_v = t_r &= a_r + fd \\ a_q = t_r &= a_r + qd \end{aligned} \right\} \text{سواء} \Rightarrow$	$t_1 \cdot t_r = t_r^r \Rightarrow (a_r)(a_r + qd) = (a_r + fd)^r$ $\Rightarrow a_r^r + qda_r = a_r^r + rfd^r + 1a_rfd$ $\Rightarrow rfd^r = -rda_r \xrightarrow{d \neq 0} rfd = -ra_r$ $\Rightarrow rfd = -r(a_r + rd) = -ra_r - fd \Rightarrow rfd = -ra_r \Rightarrow rfd = -a_r \Rightarrow d = \frac{-a_r}{10}$ $\xrightarrow{d=0} d = a_1 - a_1$	f
$\left. \begin{aligned} a_r = a_1 + d &= t_1 \\ a_f = a_1 + rd &= t_r \\ a_n = a_1 + vd &= t_v \end{aligned} \right\} \text{سواء} \Rightarrow$	$t_1 \cdot t_r = t_r^r \Rightarrow (a_1 + rd)^r = (a_1 + d)(a_1 + vd)$ $\Rightarrow a_1^r + qd^r + 4a_1d = a_1^r + vda_1 + da_1 + vda_1^r$ $\Rightarrow rda_1 = -vda_1 \xrightarrow{a_1 \neq 0} d = a_1$ $\Rightarrow a_r = a_1 + d = 2a_1, a_f = fa_1, a_n = na_1$ $\Rightarrow t_{10} = t_1 q^9 = \frac{1}{f} \times r^9 = 254$ $q = (2)$	y
$\begin{aligned} t_r &= t_1 q \\ t_r &= t_1 q^r \\ t_f &= t_1 q^r \end{aligned}$	$\begin{aligned} r t_r - r t_r &= t_f - r t_r \\ r(t_1 q^r) - r(t_1 q) &= t_1 q^r - r(t_1 q^r) \\ r q - r &= q^r - r q \Rightarrow q^r - r q + r = 0 \end{aligned}$ $\Rightarrow q = \frac{1}{3} \xrightarrow{\text{خبر ثابت}} \checkmark$	h
$\begin{aligned} a_f &= a + rd \\ a_v &= a + qd \\ a_{1r} &= a + 1rd \end{aligned}$	$\begin{aligned} t_1 &= a_f + c = a + rd + c \\ t_r &= a_v + c = a + qd + c \\ t_r &= a_{1r} + c = a + 1rd + c \end{aligned}$ $t_r^r = t_1 \cdot t_r \xrightarrow{\quad} -rd(a+c) = 0$ $C = -a \quad d = 0$ $q = \frac{qd}{rd} = r \leq$ $t_1 = rd \quad t_r = qd \quad t_r = 1rd$	q
$\begin{aligned} t_1 + t_f + t_v &= vr \\ t_1 &= a_1 \\ t_f &= a_r \\ t_v &= a_w \end{aligned}$	$\Rightarrow a_r = t_f \Rightarrow d = a(q^r - 1)$ $a_{10} = t_v \Rightarrow a + qd = a q^4 \Rightarrow a + q(a(q^r - 1)) = a q^4$ $\Rightarrow 1 + q(1 + 1) = A^r \Rightarrow A^r - qA + 1 = 0 \Rightarrow A \rightarrow 1$ $\Rightarrow q \rightarrow 1 \rightarrow a(1 + 1 + 1) = vr \Rightarrow a = \frac{vr}{3}$ $\rightarrow r \rightarrow a(1 + 1 + 4f) = vr \Rightarrow q = 1$	1.