

a Find the n th term of 3, 7, 12, 18, ... $\frac{n^2}{2} + \frac{5n}{2}$ halves in both terms	b Which term of $3n^2 + 2$ is 302? <i>the 10th</i> which term: undo $3n^2 + 2$	c The sequence 3, k , 15, 24, ... is quadratic. Find k . $k = 8$ a missing term from the differences	d The n th term is $n^2 + kn + 3$. The 4th term is 3. Find k . $k = -4$ a coefficient from one term
e Which term of $n^2 + 2n - 3$ is 140? <i>the 11th</i> solve a quadratic for n	f Show that 200 is not a term of $n^2 + 3n$ <i>180 then 208</i> not a term: it is skipped	g Which term of $\frac{2n+1}{n+3}$ is $\frac{3}{2}$? <i>the 7th</i> which term: a fraction n th term	h Find the n th term of $\frac{3}{4}, \frac{5}{7}, \frac{7}{12}, \frac{9}{19}, \dots$ $\frac{2n+1}{n^2+3}$ a linear top over a quadratic bottom
i How many terms of $n^2 - 8n + 20$ are less than 10? <i>5</i> count terms: a quadratic inequality	j The n th term is $2n^2 + kn$. The 3rd term is 4 times the 1st term. Find k . $k = 10$ an equation from two terms	k The 1st term is 4. The n th difference is $2n + 3$ (5, 7, 9, ...). Find the n th term. $n^2 + 2n + 1$ from the n th term of the differences	l Prove that the second difference of $an^2 + bn + c$ is $2a$ $2an + a + b$, then $2a$ prove: the second difference is $2a$

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