

BELL TELEPHONE LABORATORIES
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SUBJECT: A Contribution to Mathematical
Psychometrics

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FROM: E. R. Berlekamp

MEMORANDUM FOR RECORD

It is a remarkable fact that it is often possible to determine a subject's occupation from his answer to a simple question of mathematical induction. After experimenting with several such questions, I have found the most promising to be the simple query: 2,3,5,...? This memorandum diagnoses various possible responses.

(A41) 2,3,5,7,11,13,17,19,23,... This sequence is the primes. The subject who suggests this continuation is probably a number theorist.

(A45) 2,3,5,8,13,21,34,55,... This sequence is the Fibonacci numbers. Although the subject may be a number theorist, he is more likely to be a probabilist who revels in the study of 2nd order Markov processes.

(A257113) 2,3,5,10,20,40,80,... Except for 2 and 3, each term in this sequence is the sum of all preceding terms. The subject is a historian, who believes that all of the past is equally important.

(A152940) 2,3,5,8,12,17,23,30,... The sequence has constant second differences; the subject is probably a physicist or perhaps an engineer.

(Unclear
Perhaps A7494)

2,3,5,6,8,9,10,11,13,14,... The subject is an electrical engineer, whose periodic view of the sinusoidal steady state has caused him to omit every third term.

(A37)

2,3,5,6,7,8,10,11,12,13,14,15,17,... A swinger (no squares). (RLG)

2,3,5, $\pm\infty$ An optimist or pessimist of some sort.

(A27)

2,3,4,5,6,7,8,9,10,... An experimental physicist, who has chosen to treat the third initial condition as an experimental error. (JS)

1 $\frac{5}{6}$, 3 $\frac{1}{3}$, 4 $\frac{5}{6}$, 6 $\frac{1}{3}$,... A statistician who believes in linear regression. He has removed the noise from the given initial conditions to obtain the best linear fit. (HSW)

3 $\frac{1}{3}$, 3 $\frac{1}{3}$, 3 $\frac{1}{3}$, 3 $\frac{1}{3}$,... Another statistician, whose tendency toward simplification is even stronger than his predecessor's. (HOP)

(A262564)

2,3,5,4,6,7,8,9,10,... A politician. He plans to legislate away the mistakes of the past and return to normalcy. (HOP)

235-9669 This answer can be properly diagnosed only with aid of the Boston telephone directory. When the answer is found to be the phone number of a Wellesley dormitory, we may deduce that the subject is likely to be a student at MIT or Harvard.

\$2.35 An accountant.

(A262565)

2,3,5,5,3,2,2,3,5,5,3,2,... A weaver. (HSW)

(A51)

2,3,5,9,17,33,65,... The sequence is 2^n+1 ; the subject is likely to be a biologist or economist concerned with growth rates. (ENG,HOP)

2,3,5, $35/4$, $63/4$, $231/8$,... Another Malthusian, who has chosen the ratios $1\ 1/2$, $1\ 2/3$, $1\ 3/4$, $1\ 4/5$,... (JR)

2,3,5, $55/6$, $63/4$, $231/8$,... Yet another Malthusian, who has chosen $9/6$, $10/6$, $11/6$, $12/6$,... (JR)

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(Numbers in red refer to entries in Online Encyclopedia of Integer Sequences.
Added by Neil Sloane, Oct 19 2015)