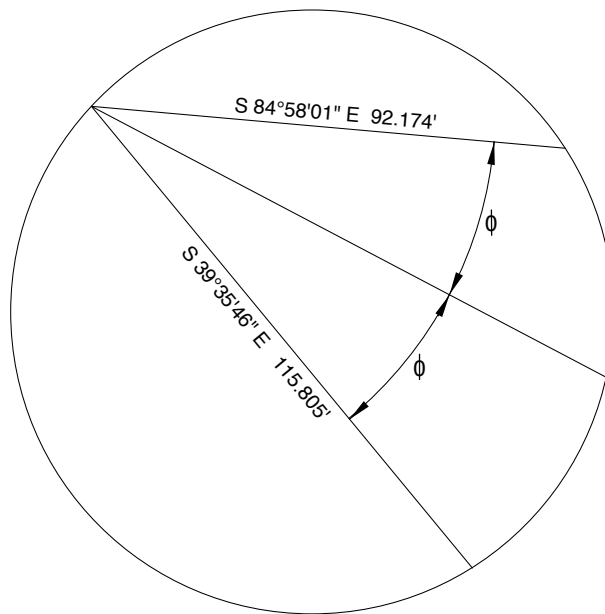


Problem
168

by Dave Lindell, L.S.



How long is the middle chord if it is on the bisector of the other two?

Problem
169

by Benjamin Bloch, Ph.D.

Using the Minimum SDQ Exponential Table show that each of the following results are incorrect.

- a) $2^{15} = ? 32,868$
- b) $16^7 = ? 268,335,456$
- c) $8^{23} = ? 590,295,810,358,305,651,712$
- d) $147^{28} = ? 4,840,445,926,998,527,143,180,132,566,802,461, 408,607,116,960,093,883,732,904,561$

Rule: To use the table to calculate the $SDQ(x^n)$ take $SDQ(x)$, then find $R = \text{Remainder of } (n-2)/6$ and locate the cell with the $(SDQ(x), R)$ answer on the table.

Example: To find the $SDQ(25^{14})$. Here $x = 25$ and $n = 14$. $SDQ(25) = 7$, and $(n-2)/6 = (14 - 2)/6 = 2$ remainder $R = 0$. Looking at the table we see that row 7, column 0 has the value 4. $SDQ(25^{14}) = 4$. Thus, $25^{14} = 37,252,902,984,619,140,625 = 85 = 13 = 4$.

MINIMUM SDQ EXPONENTIAL TABLE

n	0	1	2	3	4	5	6	7
			R=	0	1	2	3	4
SDQ(x)								
1	1	1		1	1	1	1	1
2	1	2		4	8	7	5	2
3	1	3		9	9	9	9	9
4	1	4		7	1	4	7	4
5	1	5		7	8	4	2	5
6	1	6		9	9	9	9	9
7	1	7		4	1	7	4	7
8	1	8		1	8	1	8	8
9	1	9		9	9	9	9	9