Some Crazy (and Not-So-Crazy) Things We Taught 50 Years Ago

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1. The slide rule and digit-count methods.

2. Estimating numerical radicals using a logarithm table, long division, and linear interpolation.

3. The five-credit-hour Analytic Geometry course. What happened to these topics?

4. Making the connection between the tangent of an angle and the slope of the terminal side of that angle (in standard position). We already say that $\tan\theta = \frac{\sin\theta}{\cos\theta} = \frac{y}{x}$. Saying "$\tan\theta =$ slope" is just one step further. When students know that the tangent button on their calculator is a slope finder, they have a greater interest in this important function (and its inverse), and quickly develop insights regarding why $\tan\theta$ is positive in quadrants I and III and negative in quadrants II and IV, why its period is π, and why its range is $(-\infty,\infty)$.

5. Using the insight in #4 above, find the angle between two lines, given only their slopes.

$\tan\theta = \tan(\alpha-\beta) = \frac{\tan\alpha - \tan\beta}{1+\tan\alpha\tan\beta} = \frac{m_2 - m_1}{1+m_2 m_1}$ For example, if $m_1 = 3$ and $m_2 = 5$,

$\tan\theta = \frac{5-3}{1+5\cdot 3} = \frac{2}{16} = \frac{1}{8}$, so $\theta = 7.125^o$

6. Some favorite trig identities:

$\sec^2 x + \csc^2 x = \sec^2 x \csc^2 x$ (*add* them or *multiply* them; there's no difference!)

$(\sin x + \cos x)(\tan x + \cot x) = \sec x + \csc x$ (a nontrivial identity involving all six trig functions)