

Test Yourself



By **Richard L. Elgin, PhD, LS, PE**

Dr. Richard Elgin is President of Elgin Surveying & Engineering in Rolla, Missouri. He serves as Adjunct Professor of Surveying at the University of Missouri-Rolla (UMR), and is a principal in the firm of Elgin, Knowles & Senne, Inc.

Combination Horizontal and Vertical Curve

In this series we've already done a problem similar to this, but here's another, taken from a recent "Fundamentals of Surveying" final exam for Civil and Architectural Engineering students at the University of Missouri Rolla. (Yes, the architectural engineering students at UMR take surveying.) This is a word problem, so create your own sketches as necessary.

For a curve system, the azimuth from the PC to the PI is $140^{\circ} 40'$, delta is $52^{\circ} 52'$ left and the PT station is $96+96.96$. The degree of curvature is $8^{\circ} 00' 00''$. At $91+42.85$ is a BVC for a vertical curve whose length is 1500 feet. For the vertical curve, $g(1)$ is $+8.7\%$ and $g(2)$ is -3.3% . Compute the horizontal coordinates and elevation for station $95+11.26$. The coordinates for the curve's RP are: 10,000.00 north, 8000.00 east. The BVC elevation is 555.55 feet.

For the solution to this problem please visit our website at:
www.TheAmericanSurveyor.com. Good luck! 