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Alice T. Schafer

Schafer was born in 1915 in the state of Virginia. Because of a fatal accident her parents were killed and she had to be raised by her aunts. They were very supportive of her interest in math. Sadly they were the only ones who were completely supportive of her choice of study. While studying math Schafer came across many roadblocks. Most of which had to do with her teachers. Schafer was strong. She wouldn't let anything get in her way. Over the years she was able to achieve more than most could imagine. She got her P.H.D. in math with a thesis on metric and projective differential geometry. She was on faculty at Douglass College, University of Michigan, Swarthmore College and Wellesly College. Finally, she was the chair of the math department at Marymount.

Schafer didn't just define her professional life with math. She was also an activist for women's rights. She was a founder, a member and the second president of the AWM or Association for Women in Mathematics. Due to her great contributions to women in math a scholarship was named after her.

Shaping with Schafer!!!

Remember back to the old days when math had numbers and seemed somewhat understandable (Go ahead and smile. It's allowed). Now break that enjoying thought and come back to reality. We are all aspiring mathematicians and now Calc 3 has got to become our loving cushion built of the fun old days of math. So sit back and enjoy the shaping of your mind with Schafer's math.

The introduction to Schafer's thesis talked about oscillating planes. If you remember the great presentation that we did you will recall that a plane has to be built of at least to vectors. One is the tangent vector and the other is called the normal vector. The tangent vector is the 1^{st} derivative of the function and the normal vector is the 2^{nd} derivative of the function. So let us "kick it" with a problem.

Find the normal and the tangent to F(x)=(a cos(t), a sin(t), bt) where t is an element of the reals.

We know you gave it the "SMACK DOWN". So let's get crazy and "smell what the Schafer is cookin"!!!!

Now that we know how to find a plane let's see how they act on different surfaces. Consider the following surfaces. On each surface draw three planes built from the tangent and normal vectors. Also try to draw the length

you think the normal vector will be. So, put the children to bed and pull up your britches cause it’s time to have a crazy party with shapes.