

CRISS IMPROVES MATH COMPREHENSION

Creative Writing and Student Portfolios

Marilyn Cavanna's College Prep geometry class (Manchester, Connecticut) sent us some delightful writing samples. Marilyn writes that most of her student work is in the form of writing samples. Her students keep math portfolios. In their portfolios, students explain concepts from their math text. Marilyn requires that the students write why they picked certain problems or proofs to include. As part of the portfolio, she encourages them to include RAFT papers and poetry. For the RAFT papers, she had her students take something they had learned in geometry and write about it to an audience of elementary students.

Once upon a time, there was a curious and perfectly shaped equiangular triangle. I call him "Bob". Bob was wandering around an abstract math wonderland called Cavannaland, a land perfect for such a sojourn. Bob came across a small cottage with smoke rolling out of a brick chimney and decided it would make a great place to spend the evening. Bob had always wondered what type of triangle he was, but because of the scarcity of such shapes in Cavannaland, he was never told. Bob let himself in and looked around, but there was no one around. He decided to examine the bedroom for a place to sleep. In it he saw six beds set in a circle. Bob tried to sleep in one of the beds and it was quite uncomfortable. A narrow angle at one end hurt his sensitive 60 degree angle. "This must be an acute triangle bed because all of its angles are acute and one is less than my angles." The next bed looked like half of a square because it had a right, 90 degree angle on one side. This wouldn't do either. The bed marked obtuse had one uncomfortable angle which measured 160 degrees. Maybe the other beds might be suitable. Bob knew, because

of a theorem he once knew, named Theorem 20, that because his angles were all the same size, that all of his sides must be equal in length. (Bob always wondered why his body was always marked with arcs and tick marks.) The fourth had no sides congruent and was meant for a scalene triangle, not him. The fifth bed had a familiar name to it, "Isosceles". Bob had been called this before by a fat, wart-cornered Ogre who was a $12,762$ -gon! He tried the bed, but the vertex angle was too narrow and the base was too short. He had almost given up hope, when he finally spotted a perfect-looking bed marked "For Equis Only". "That's what I am! I'm an equiangular, equilateral triangle!" Bob was glad to discover the truth on his own.

Marilyn's students also wrote poems about their favorite geometry theorem. An example of the poems appears on the next page.

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MY FAVORITE THEOREM

by Tom Breen

'Twas a thick and slothful early morn,
when Maude and I set out to Innisfree,
past the darkened Georgian homes,
with their crumbling outer walls.

To Tara;--High Hill of Tara! seat of high-born kings
ancient place of knowledge and divining arcane things--
was where our carriage sped this day,
for knowledge it was that which we sought,
to be attained without delay.

For a vile and grievous dilemma,
had come to hang above us,
a preponderance to which our well-bred minds,
could achieve little but naught.

Maude and I were children of letters,
the written word and not the number.
And the problem which had beset us this day
was math, and thus to us foreign.

We had been charged to discover,
the perpendicular bisector
of a given triangle,
which had us so confused.

So we climbed the Hill of Tara,
desolate these thousand years,
and pitched five bright and golden coins,
into the ruined Well of Knowledge there.

We called out into the inky well,
in the manner of Fionn and Boru.
And asked our burning query,
then waited, quiet and still.

Soon a voice primordial,
and speaking the tongue of the Gaels,
answered us with a riddle;
"Two points equi imply a perpendicular bisector."

At first, we were surprised,
and quiet with reverent awe.
But then, sweet joy set in:
our math problem was solved!

We drove back to Dublin,
with a haste born of glee.
Bringing a new theorem,
a gift from another time.

Inspired by William Butler Yeats