TCU Math Newsletter

He or she who asks a question is a fool for five minutes; he or she who does not ask a question remains a fool forever.

Confucius

November TCU Math Club Meeting on Monday, November 2 via Zoom

The TCU Math Club will be meeting via Zoom on Monday, November 2 at 6:30 pm. They will host a Halloween themed movie night of watching nostalgia/throwback Disney channel Halloween themed episodes. It will be a fun way to close out Math Club's semester right before finals prep and projects begin! The Zoom meeting link https://tcu.zoom.us/j/91368610847 is the same for every TCU Math Club meeting. All TCU students are invited to attend.
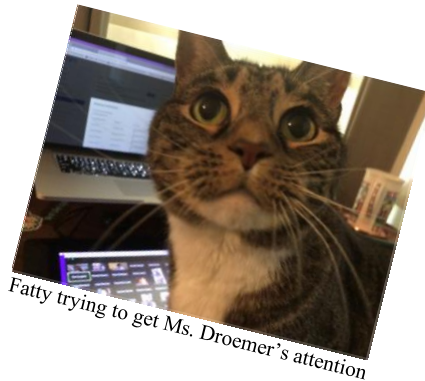
Pets in Class!

The TCU Math Faculty and staff are getting a lot of help from their furry friends when teaching classes and working on Zoom this semester. Here are some pictures of our animals and their Zoom antics.

Coco hanging with Dr. Park

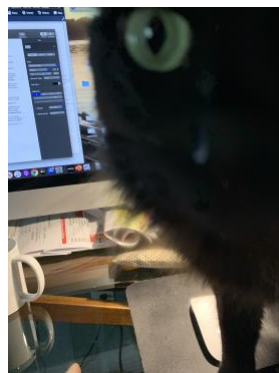Shiner helping Ms. Springer with Math Department business

Fatty trying to get Ms. Droemer's attention

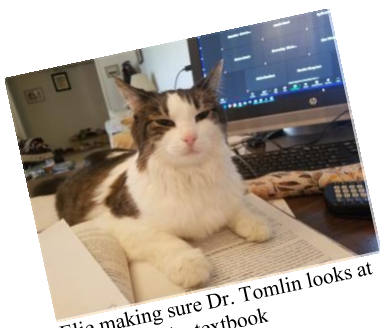Kristi Rittby

Stanley loves visiting Ms. Rittby during class

Xerxes likes to be up close in Ms.Ellithorpe's class

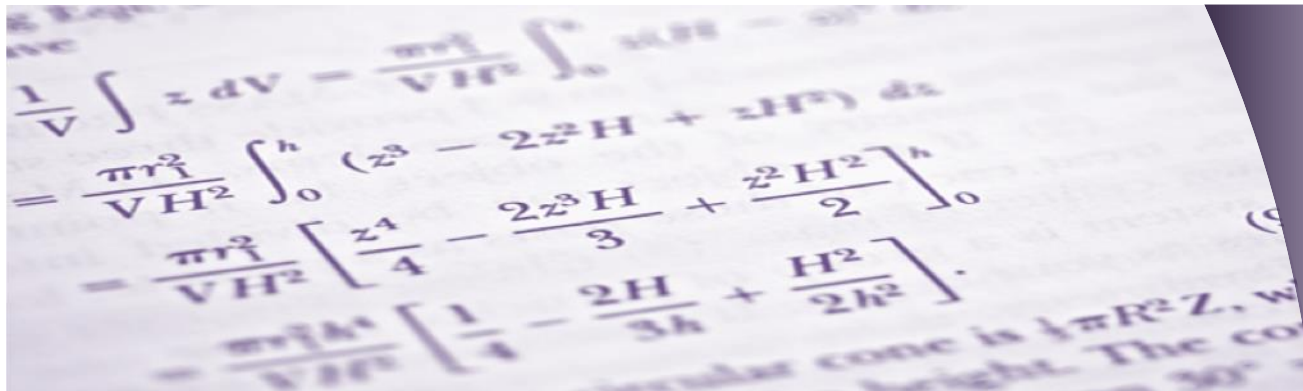Leo is an attentive student in Dr. Hatcher's Calculus class

Isaiah napping through Dr. Potgieter's class

Elie making sure Dr. Tomlin looks at her and not the textbook

Solution to the October 2020 Problem of the Month

Problem: (due to Peter Winkler) Two marksmen, one of whom ("Acuron") hits a certain small target 75% of the time and the other ("Blunderon") only 25%, aim simultaneously at that target. One bullet hits. What is the probability that it came from Acuron?

Solution: The probability is 9/10. The probability Acuron hits and Blunderon misses is $(3/4)(1 - 1/4) = 9/16$. The probability Blunderon hits and Acuron misses is $(1/4)(1 - 3/4) = 1/16$. Thus, the conditional probability that Acuron hits given that one of them hits is

$$\frac{9/16}{9/16 + 1/16} = \frac{9}{10}.$$

The Problem of Month was solved by Easton Walsh.

November 2020 Problem of the Month

This month's problem is due to Professor Emeritus Robert Doran. Let z and w be complex numbers such that $|z - 1| = r < 1$ and $|w - 1| = s < 1$. Prove that the real part of zw is at least $1 - r - s - rs$.

(For an extra challenge, find the greatest real number c such that the real part of zw must be at least $1 - r - s + crs$.)