

Stubborn Endings

Northwest Iowa Math Teachers' Circle



Led by Dr. Thomas J. Clark

1) Stubborn Endings:

a. Multiply any number that ends in 5 with any other number that ends in 5, what always happens?

b. Is 5 the only digit this is true of? What other ones?

c. We call a given positive integer “stubborn” if the product of any two numbers that end with the digits of the given number will also end with the digits of that number.

d. Are there any two-digit stubborn numbers?

e. Are there any three-digit stubborn numbers?



2) Pushing toward understanding

a. How can you know a number is stubborn without checking every possible product?

b. Turn this into a theorem and prove it.

c. How does make it easier to find other stubborn numbers?

d. What does it mean about any stubborn number that is truncated on the left?

3) Find as many stubborn numbers as you can.



4) Stubborn numbers in other bases?

5) Wrapping up:

a. What did you notice? What did you wonder?

b. How could you use some version of this in your class?

c. What standards might this activity hit, either content or process standards?

d. What questions do you have?