

Meadowbrook Congregational Church
“The Math of God”
Steve Kellar – Guest Preacher
June 19, 2011 – Father’s Day

Luke 15: 3-7

3 So he told them this parable: ⁴‘Which one of you, having a hundred sheep and losing one of them, does not leave the ninety-nine in the wilderness and go after the one that is lost until he finds it? ⁵When he has found it, he lays it on his shoulders and rejoices. ⁶And when he comes home, he calls together his friends and neighbors, saying to them, “Rejoice with me, for I have found my sheep that was lost.” ⁷Just so, I tell you, there will be more joy in heaven over one sinner who repents than over ninety-nine righteous people who need no repentance.

Mark 12: 41-44

41 He sat down opposite the treasury, and watched the crowd putting money into the treasury. Many rich people put in large sums. ⁴²A poor widow came and put in two small copper coins, which are worth a penny. ⁴³Then he called his disciples and said to them, ‘Truly I tell you, this poor widow has put in more than all those who are contributing to the treasury. ⁴⁴For all of them have contributed out of their abundance; but she out of her poverty has put in everything she had, all she had to live on.’

I am going to start today with a survey.

Think back to your school days. Now raise your hands if you really didn’t like your math class. Be honest, now! You are in church.

So apparently you people did not read the sermon title on the sign on the way in. It said “God’s Math”. Or maybe you thought somebody got it wrong and it was supposed to be “God’s Wrath”? Well, I don’t want to disappoint anyone, but if you are looking for Fire and Brimstone, you won’t find it here. I think you can still make the 11:00 service at the Baptist church over on Novi Road. I won’t be offended ... I can’t promise they’ll be serving ice cream after the service, though.

Some of you know that I am an actuary. An actuary is someone with strong training in mathematics, and specifically the mathematics of probability and statistics. We apply that knowledge to business problems of risk, insurance, benefits, pensions, etc. You know, actuaries are accountants, without the sparkling personality.

So I was one of those who actually liked math class, and I thought math would make a good sermon topic. Next I needed to connect this to a scripture lesson from the Bible. Well, that was easy! Naturally, the Book of Numbers! You know – Genesis, Exodus, Leviticus, Numbers. It’s right there in the early part of the old testament .

Time out. If there are any other actuaries in the room, I realize that I have just violated actuarial standards of practice by counting on my fingers. Please don't report me to the standards board. It was just a dramatic device..... I didn't really need to do it.

So the Book of Numbers seemed obvious, until I spent some quality time with it. I found it is mostly about the years that the Israelites spent wandering through the desert wilderness, between escape from Egypt and reaching the promised land. That's not really about numbers. I did discover something I didn't know. The Book of Numbers is also the source of the beautiful and widely used benediction "the lord bless you and keep you, the lord make his face to shine upon you and be gracious unto you, the lord lift up his countenance upon you and give you peace." But I don't think this benediction is about numbers either, even though it does use the word "countenance". Groan all you want, but remember what cartoonist Doug Larson said "A pun is the lowest form of humor unless you thought of it yourself." And I thought of that one myself!

Anyway, the Book of Numbers apparently gets its name from the first 6 chapters which are mostly devoted to the excruciatingly specific details of the censuses which were conducted by the leaders of the traveling company of Israelites early in the ordeal. They counted all the males over 20 in each of the ancestral tribes of Israel. They counted all the first born males. A separate census was then conducted of the Levites and all their sub-groups. Frankly, it kind of goes on and on... and on.

Chapter 7 follows with a listing of the offerings to God from each tribe again in painstaking detail – for example from "the leader of the Ephraimites: ⁴⁹his offering was one silver plate weighing one hundred and thirty shekels, one silver basin weighing seventy shekels,..... ⁵⁰one golden dish weighing ten shekels, full of incense; ⁵¹one young bull, one ram, one male lamb a year old, for a burnt-offering; ⁵²one male goat for a sin-offering; ⁵³and for the sacrifice of well-being, two oxen, five rams, five male goats, and five male lambs a year old." Whew! There are some numbers for you.

Now I don't know about you, but if I was still only a year or two escaped from slavery, wandering in the wilderness, not sure where I would end up..... the last thing I would probably want to do is stop and take a detailed headcount, and an inventory.

So while I wasn't seeing a scripture lesson in there, it did get me to wondering – what is it about the human species that wants to spend so much time counting, measuring, categorizing, ranking, summarizing, interpreting and manipulating numbers? Of course we need our higher level brains to be capable of doing it, but it isn't a given that we have to use them this way, is it? But oh, do we count! It seems with us almost instinctual, or maybe even spiritual? I suspect that when God created the first man and woman, they immediately looked themselves over and said, "Hey, I've got a bunch of these things – I think I'll count 'em!"

Did you know that there are animal bones that have been found in Africa – bones perhaps more than 20,000 years old – which have notches cut in them, obviously a counting system?

Highly developed mathematics is apparent from the earliest civilizations. We have found ancient Babylonian and Egyptian mathematical texts - almost 4,000 years old - by which time they knew not only addition and subtraction, but multiplication, division, fractions, prime numbers, algebra, quadratic equations.

The Babylonian texts were on clay tablets inscribed while the clay was moist and baked hard in an oven or by the sun. Some of these even appear to be graded homework. Since they were hard-baked clay, I guess the old "The dog ate my homework" excuse wouldn't work very well for Babylonian pupils.

Of course, the Greeks during the 5 centuries BC produced some of the giants of math, still household names today (well, at least in actuaries' households) –Euclid – whose geometry was probably studied by many of you in high school; Archimedes – considered by some to be the greatest mathematician of all time; Pythagoras – the Pythagorean theorem – the foundation of trigonometry - you know, "the sum of the squares of the sides of a right triangle is equal to the square of the hypotenuse"? That, after all, is the formula that the scarecrow in the Wizard of Oz quoted when the Wizard convinced him that he already had a brain. I get goose bumps just thinking about it.

In China – an empire totally isolated from the mathematical developments in the Mediterranean and middle east - the first known use of the base 10 decimal system that we now use, occurred over 2000 years ago. This allowed the development of the first mechanical computing device – the abacus, a couple hundred years later.

At about the same time completely around the world, the ancient Mayans of central America developed a sophisticated counting approach that used a base 20 numbering system. Scholars think this was derived directly from having 10 fingers and 10 toes. Mayans appear to be the first mathematicians to develop a concept of the number zero. And they were quite good at astronomical calculations – e.g. without computers or space telescopes, they set the length of a solar year at 365.242 days - less than 2/10,000ths from the modern value we use.

In fact, looking at all of these great early civilizations, you would assume that advanced mathematics must be an intrinsic part of how a great civilization is built. Although you have to wonder how the Romans got to be a world power with their numbering system. I'm imagining a Roman middle school teacher - "No Octavius, MCXXII is not a prime number because it is clearly divisible by XVII without leaving a remainder"

So whether math is a fundamental component of our creation, or just a byproduct of the development of our higher functioning brain, it has always been a foundation for our societies and surely always will be. We use it for all kinds of valuable purposes. Math is a fundamental component of most of our sciences (physics, chemistry, botany, etc.). We apply it to everyday problems through engineering, climatology, financial disciplines etc. Through economics, we use it for important social purposes - how can we prepare for the future without counting, inferring, and projecting? This is what insurance is about in its noblest sense (and believe it or not, it does have a noble purpose) – we think about risks – the bad and unexpected things that can happen, try to project and quantify the impact of the risk. And then we pool our funds and use them to make the impact less severe to the unfortunate person who has a house burn down, or a disability, etc.

Of course, like any tool that people use, numbers can be overused or misused. We constantly use numbers to measure ourselves against others whether it is next door neighbors or people from other countries. Statements about having the most this or the biggest that, or the fastest, or the smartest all are facilitated by a comparison of numbers – say an SAT score. And that makes them legitimate, right? After all, “The numbers don’t lie”. We have the Guinness book of world records, we keep score in all our sports, we measure winning streaks, audience share, approval ratings, per capita income, etc. Some of these are useful or at least harmless, but often, numerical “one-upmanship” is much of what is going on.

And as much as we use numbers to puff ourselves up, they can be dehumanizing as well. Everyone has heard the expression “I feel like a number”, and it doesn’t mean a positive feeling.

And of course numbers can be manipulated, to try to prove the point of view of the person doing the manipulating. Hello, ever heard of a political poll?

Which brings me to the science of statistics – an area that I deal with the most as an actuary. Here is dictionary definition of statistics:

“the science that deals with the collection, classification, analysis, and interpretation of numerical facts or data, and that, by use of mathematical theories of probability, imposes order and regularity on aggregates of more or less disparate elements

There are a couple of interesting components to that definition – first “Interpretation of numerical facts or data” ;

If the data shows increasing poverty, do we interpret that as a failure of government welfare programs, failure of the education system, global competition, the bad economy, overpopulation, erosion of the work ethic? Sometimes there are nearly as many interpretations as data elements. Often our math can’t tell us the best one.

Next from the definition – imposes order and regularity from aggregates of more or less disparate elements?

Do “Disparate Elements” always need to be aggregated and to have order imposed? – Novi is a relatively prosperous community. Average household income is \$83k. Why do we need a Novi food bank? Who can’t at least live reasonably well on \$83k. As a statistic, averages may impose order to disparity, but drawing conclusions from averages isn’t always wise.

There is a common, rather cynical view of the science of statistics. You can find lots of well know quotes about statistics expressing this view, for example this famous one attributed to British statesman Benjamin Disraeli:

“There are three kinds of lies: lies, damned lies, and statistics.”

Or one of my favorites from Scottish poet, novelist, and anthropologist, Andrew Lang:

“An unsophisticated forecaster uses statistics as a drunken man uses lamp-posts - for support, rather than for illumination.”

Now I use statistics as a tool, and though there is some truth to these observations, I resent some of this cynicism. Surely our advanced data gathering methods, and mathematical techniques and models can find the right interpretation and conclusion if only we dig deep enough, if we sort things another way and test another hypothesis. And we do keep after it. But I think that God has already advised and cautioned us about over reliance on our own “math”.

Take the well known story of feeding the 5,000 from the 5 loaves of bread and 2 fish. The disciples looked at the available data, made a projection, and concluded “How is this going to work?”. Each person gets $1/1000^{\text{th}}$ of a loaf? $1/2500^{\text{th}}$ of a fish? God doesn't seem to understand fractions. Apparently, God also doesn't know the formula for conversion of calories into energy, either. Someone should be walking away hungry here. But God's math includes its own special law of supply and demand. Supply may not always equal demand, but supply always equals need. We shouldn't assume otherwise.

Or take the first of our two scripture lessons. The lamb missing from the flock is what the statisticians might call an outlier – a statistical blip, an insignificant data point. One of those disparate elements to be ignored when we go about imposing “order and regularity” to the data derived from the other 99 in the flock. But with the math of God, the individual is unique and important, - not represented by the average, not to be ignored or minimized. The story also says to me that God is not all that interested in heeding the laws of probability – in playing the odds, if you will. Surely it is the safer bet - for both the shepherd and the flock - if the shepherd stays and protects them instead of going out traipsing all over the woods and hills looking for the lost lamb. But the math of God tells us that it is right to take the risk to save one lost soul, even if we might calculate the odds as a long shot.

And the woman who offered two copper pieces compared to the much greater offerings of the rich? Certainly, both the receiver and the giver and most of us might place a greater value on the rich person's gift. But the math of God uses an economic system different from ours. God doesn't keep world record books of contributors, or assign negative attributes to the giver based on how little the gift was. The math of God is based on the volume of the giver's heart, and the magnitude of the sacrifice that it took to be able to give anything.

God gave us a brain capable of “doing the math”, but it may seem to us that the math of God does not always add up. God's grace, after all, is not given only to the highest ranked or even to the “average” person. God's grace does not follow from any logical inference – I worship, therefore it is due to me. The probability of receiving God's grace isn't necessarily increased in proportion to how “good” of a life you lead. But God's grace is not a problem in calculus, or a set of equations to be solved. As the American philosopher Eric Hoffer said quite simply, “The hardest arithmetic to master is that which enables us to count our blessings.” God's grace is a blessing, and a gift, and how fitting that it is not evidenced by overwhelming statistical data or by some elegant two column proof. Rather the proof lies in what might be called the ultimate statistical improbability. The proof is the resurrection of God's son Jesus.