Can You Digit?

A Little Fun With Numbers

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Carnac The Magnificent Do you remember this recurring Johnny Carson role where he'd first "divine" an answer and then open an envelope to reveal the question? You can do the same thing with numbers.

Ask your friends to pick any number, such as the date in the month they were born (i.e. a number from 1 to 31). Now, tell them to double it. Then add 10. Then cut that result in half. Now subtract the date they started with. And then, to their astonishment, you open up the envelope and reveal their result that you've already written: 5!

It always works. Here's the math. Let's say N is the date they pick. Double it = 2N. Add 10 = 2N + 10. Cut that result in half = N + 5. Subtract the original number N and you're left with just 5. You can change up the variables to come up with different results.

Number 9 It's not just a chant from The Beatles' White Album. The number 9 will help you easily spot a transposition error – you know, writing down $1.24 when it's really $1.42. The difference between $1.24 and $1.42 is 18 cents, which is a multiple of 9. In fact, **the difference between any two transposed numbers will always be a multiple of 9**. [Want the algebra behind this? Contact me.]

This fact could come in handy. Let's say you're reconciling your checkbook with your bank statement. You show a balance of $22,300.54; the bank statement shows $23,200.54. You're off by $900. Because this $900 difference is a multiple of 9, you should check your entries for a simple transposition error.

Rule of 72 This is a quick way to estimate how long something will double at a given interest or growth rate. **To estimate the years for something to double, you simply divide 72 by the rate.** Let's say you have an investment that's earning 5% per year. The Rule of 72 suggests it will take just over 14 years to double (since 72 / 5 = 14.4). You can also go the other way: given that something has doubled, you can estimate the rate of return. Let's say your home has doubled in value over the last 12 years. The Rule of 72 would tell you that your rate of return was roughly 6% per year (since 72 / 12 = 6).

Golf Card Speed Adding I play a lot of golf. Poorly. I'm what's known as a "bogey golfer" – I average a bogey (1 over par) on every hole. That means for an 18-hole round I'll shoot something like 90. My friends play at pretty much the same level. In fact, the USGA says that the average golfer in its national system has a 15 handicap, which implies a score of around 90.

Because my golf group all shoot near 90, I can add up our golf scores very quickly with a little trick called **"casting out 5s."** On each

nine holes, you simply ignore all the 5s in your score. And you also ignore any pair of scores that add up to 10 (like 7 & 3, 4 & 6). Then add up the remaining scores, but don't use the actual score. Instead, you only add up its difference from 5. So an actual score of 6 is added as +1; a 4 becomes -1. A 7 (which I see too often on my card...) is a +2. **In short, you've quickly determined how much your score varies from a score of all 5s**. You simply add this variance to 45 to get your front nine score; repeat for the back nine.

The graphic shows how to use this method to total the example scorecard.

Hole	1	2	3	4	5	6	7	8	9	Tally	Total
Score	5	5	5	6	4	5	4	4	5		
Fast Add	x	x	x	x		x	-1	-1	x	-2	43

In a split second, I can see that the score is 43. I ignored the 5s on holes #1, #2 & #3. I ignored the 6 & 4 on holes #4 & #5. I ignored the 5 on #6. I tallied the 4 on hole #7 as -1; the tally ran to -2 with the 4 on #8. I ignored the 5 on hole #9. So my final tally was -2, which when added to 45 gave me a score of 43.

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