14. The Dodecahedron Leads the Way

Up ahead, the road divided into three and, as if in reply to Milo's question, an enormous road sign, pointing in all three directions, stated clearly:

DIGITOPOLIS
5 Miles
1,600 Rods
8,800 Yards
26,400 Feet
316,800 Inches
633,600 Half inches
AND THEN SOME

"Let's travel by miles," advised the Humbug; "it's shorter."
"Let's travel by half inches," suggested Milo; "it's quicker."
"But which road should we take?" asked Tock. "It must make a difference."
As they argued, a most peculiar little figure stepped nimbly from behind the sign and approached them, talking all the while. "Yes, indeed; indeed, it does; certainly; my, yes; it does make a difference; undoubtedly."
He was constructed (for that's really the only way to describe him) of a large assortment of lines and angles connected together into one solid many-sided shape—somewhat like a cube that's had all its corners cut off and then had all its corners cut off again. Each of the edges were neatly labelled with a small letter, and each of the angles with a large one. He wore a handsome beret on top and, peering intently from one of his several surfaces, was a very serious face. When he reached the car, the figure doffed his cap and recited, in a loud clear voice:

"My angles are many.
My sides are not few.
I'm the Dodecahedron.
Who are you?"

"What's a Dodecahedron?" inquired Milo, who was barely able to pronounce the strange word.
"See for yourself," he said, turning around slowly. "A Dodecahedron is a mathematical shape with twelve faces."
Just as he said it, eleven other faces appeared, one on each surface, and each one wore a different expression.
"I usually use one at a time," he confided, as all but the smiling one disappeared again. "It saves wear and tear. What are you called?"
"Milo," said Milo.
"That is an odd name," he said, changing his smiling face for a frowning one. "And you only have one face."
"Is that bad?" asked Milo, making sure it was still there.
"You'll soon wear it out using it for everything," replied the Dodecahedron. "Now, I have one for smiling, one for laughing, one for crying, one for frowning, one for thinking, one for pouting, and six more besides. Is everyone with one face called a Milo?"
"Oh no," Milo replied; "some are called Henry or George or Robert or John or lots of other things."

"How terribly confusing," he cried. "Everything here is called exactly what it is. The triangles are called triangles, the circles are called circles, and even the same numbers have the same name. Why, can you imagine what would happen if we named all the twos Henry or George or Robert or John or lots of other things? You'd have to say Robert plus John equals four and if the four's name were Albert, things would be hopeless."

"I never thought of it that way," Milo admitted.

"Then, I suggest you begin at once," admonished the Dodecahedron from his admonishing face, "for here in Digitopolis everything is quite precise."

"Then, perhaps, you can help us decide which road to take," said Milo.

"By all means," he replied happily. "There's nothing to it. If a small car carrying three people at thirty miles-an-hour for ten minutes along a road five miles long at 11:35 in the morning starts at the same time as three people who have been travelling in a little automobile at twenty miles an hour for fifteen minutes on another road exactly twice as long as one half the distance of the other, while a dog, a bug, and a boy travel an equal distance in the same time or the same distance in an equal time along a third road in mid-October, then which one arrives first and which is the best way to go?"

"Seventeen!" shouted the Humbug, scribbling furiously on a piece of paper.

"Well, I'm not sure, but " Milo stammered after several minutes of frantic figuring.

"You'll have to do better than that," scolded the Dodecahedron, "or you'll never know how far you've gone or whether or not you've ever gotten there."

"I'm not very good at problems," admitted Milo.

"What a shame," sighed the Dodecahedron. "They're so very useful. Why, did you know that if a beaver two feet long with a tail a foot-and-a-half long can build a dam twelve feet high and six feet wide in two days, all you would need to build Boulder Dam is a beaver sixty-eight feet long with a fifty-one-foot tail?"

"Where would you find a beaver that big?" grumbled the Humbug as his pencil point snapped.

"I'm sure I don't know," he replied, "but, if you did, you'd certainly know what to do with him."

"That's absurd," objected Milo, whose head was spinning from all the numbers and questions.

"That may be true," he acknowledged, "but it's completely accurate and, as long as the answer is right, who cares if the question is wrong? If you want sense, you'll have to make it yourself."

"All three roads arrive at the same place at the same time," interrupted Tock, who had patiently been doing the first problem.

"Correct!" shouted the Dodecahedron. "And I'll take you there myself. Now you can see how important problems are. If you hadn't done this one properly, you might have gone the wrong way."

"I can't see where I made my mistake," said the Humbug, frantically rechecking his figures.

"But, if all the roads arrive at the same place at the same time, then aren't they all the right way?" asked Milo.

"Certainly not!" he shouted, glaring from his most upset face. "They're all the *wrong* way. Just because you have a choice, it doesn't mean that any of them *has* to be right." He walked to the sign and quickly spun it around three times. As he did, the three roads vanished and a new one suddenly appeared, heading in the direction that the sign now pointed.

"Is every road five miles from Digitopolis?" asked Milo.

"I'm afraid it has to be," the Dodecahedron replied, leaping onto the back of the car. "It's the only sign we've got."

The new road was quite bumpy and full of stones and, each time they hit one, the Dodecahedron bounced into the air and landed on one of his faces, with a sulk or a smile or a laugh or a frown, depending upon which one it was.

"We'll soon be there," he announced happily, after one of his short flights. "Welcome to the land of numbers."

"It doesn't look very inviting," the bug remarked for, as they climbed higher and higher, not a tree or a blade of grass could be seen anywhere. Only the rocks remained.

"Is this the place where numbers are made?" asked Milo, as the car lurched again, and this time the Dodecahedron sailed off down the mountainside, head-over-heels and grunt-over-grimace, until he landed sad-side-up at what looked like the entrance to a cave.

"They're not made," he replied, as if nothing had happened. "You have to dig for them. Don't you know anything at all about numbers?"

"Well, I don't think they're very important," snapped Milo, too embarrassed to admit the truth.

"NOT IMPORTANT!" roared the Dodecahedron, turning red with fury. "Could you have tea for two without the two—or three blind mice without the three? Would there be four corners of the Earth if there weren't a four? And how would you sail the seven seas without a seven?"

"All I meant was " began Milo, but the Dodecahedron, overcome with emotion and shouting furiously, carried right on.

"If you had high hopes, how would you know how high they were? And did you know that narrow escapes come in all different widths? Would you travel the whole wide world without ever knowing how wide it was? And how could you do anything at long last," he concluded, waving his arms over his head, "without knowing how long the last was? Why, numbers are the most beautiful and valuable things in the world. Just follow me and I'll show you." He turned on his heel and stalked off into the cave.

"Come along, come along," he shouted from the dark hole. "I can't wait for you all day." And, in a moment, they'd followed him into the mountain.

It took several minutes for their eyes to become accustomed to the dim light and, during that time, strange scratching, scraping, tapping, scuffling noises could be heard all around them.

"Put these on," instructed the Dodecahedron, handing each of them a helmet with a flashlight attached to the top.

"Where are we going?" whispered Milo, for it seemed like the kind of place in which you whispered.

"We're here," he replied with a sweeping gesture. "This is the numbers mine."

Milo squinted into the darkness and saw for the first time that they had entered a vast cavern lit only by a soft, eerie glow from the great stalactites which hung ominously from the ceiling. Passages and corridors honeycombed the walls and wound their way from floor to ceiling, up and down the sides of the cave. And, everywhere he looked, Milo saw little men no bigger than himself busy digging and chopping, shovelling and scraping, pulling and tugging carts full of stone from one place to another.

"Right this way," instructed the Dodecahedron, "and watch where you step."

As he spoke, his voice echoed and re-echoed and re-echoed again, mixing its sound with the buzz of activity all around them. Tock trotted along next to Milo, and the Humbug, stepping daintily, followed behind.

"Whose mine is it?" asked Milo, stepping around two of the loaded wagons.

"BY THE FOUR MILLION EIGHT HUNDRED AND TWENTY-SEVEN THOUSAND SIX HUNDRED AND FIFTY-NINE HAIRS ON MY HEAD, IT'S MINE, OF COURSE!" bellowed a voice from across the cavern. And, striding toward them, came a figure who could only have been the Mathemagician.

He was dressed in a long flowing robe covered entirely with complex mathematical equations and a tall pointed cap that made him look very wise. In his left hand, he carried a long staff with a pencil point at one end and a large eraser at the other.

"It's a lovely mine," apologised the Humbug, who was always intimidated by loud noises.

"The biggest number mine in the kingdom," said the Mathemagician proudly.

"Are there any precious stones in it?" asked Milo excitedly.

"PRECIOUS STONES!" he roared, even louder than before. And then he leaned over toward Milo and whispered softly, "By the eight million two hundred and forty-seven thousand three hundred and twelve threads in my robe, I'll say there are. Look here."

He reached into one of the carts and pulled out a small object, which he polished vigorously on his robe. When he held it up to the light, it sparkled brightly.

"But that's a five," objected Milo, for that was certainly what it was.

"Exactly," agreed the Mathemagician; "as valuable a jewel as you'll find anywhere. Look at some of the others."

He scooped up a great handful of stones and poured them into Milo's arms. They included all the numbers from one to nine, and even an assortment of zeros.

"We dig them and polish them right here," volunteered the Dodecahedron, pointing to a group of workers busily employed at the buffing wheels; "and then we send them all over the world. Marvellous, aren't they?"

"They are exceptional," said Tock, who had a special fondness for numbers.

"So that's where they come from," said Milo, looking in awe at the glittering collection of numbers. He returned them to the Dodecahedron as carefully as possible but, as he did, one dropped to the floor with a smash and broke in two. The Humbug winced and Milo looked terribly concerned.

"Oh, don't worry about that," said the Mathemagician as he scooped up the pieces. "We use the broken ones for fractions."

"Haven't you any diamonds or emeralds or rubies?" the bug asked irritably, for he was quite disappointed in what he'd seen so far.

"Yes, indeed," the Mathemagician replied, leading them to the rear of the cave; "right this way."

There, piled into enormous mounds that reached almost to the ceiling, were not only diamonds and emeralds and rubies but also sapphires, amethysts, topazes, moonstones, and garnets. It was the most amazing mass of wealth that any of them had ever seen.

"They're such a terrible nuisance," sighed the Mathemagician, "and no one can think of what to do with them. So, we just keep digging them up and throwing them out. Now," he said, taking a silver whistle from his pocket and blowing it loudly, "let's have some lunch."

And, for the first time in his life, the astonished bug couldn't think of a thing to say.