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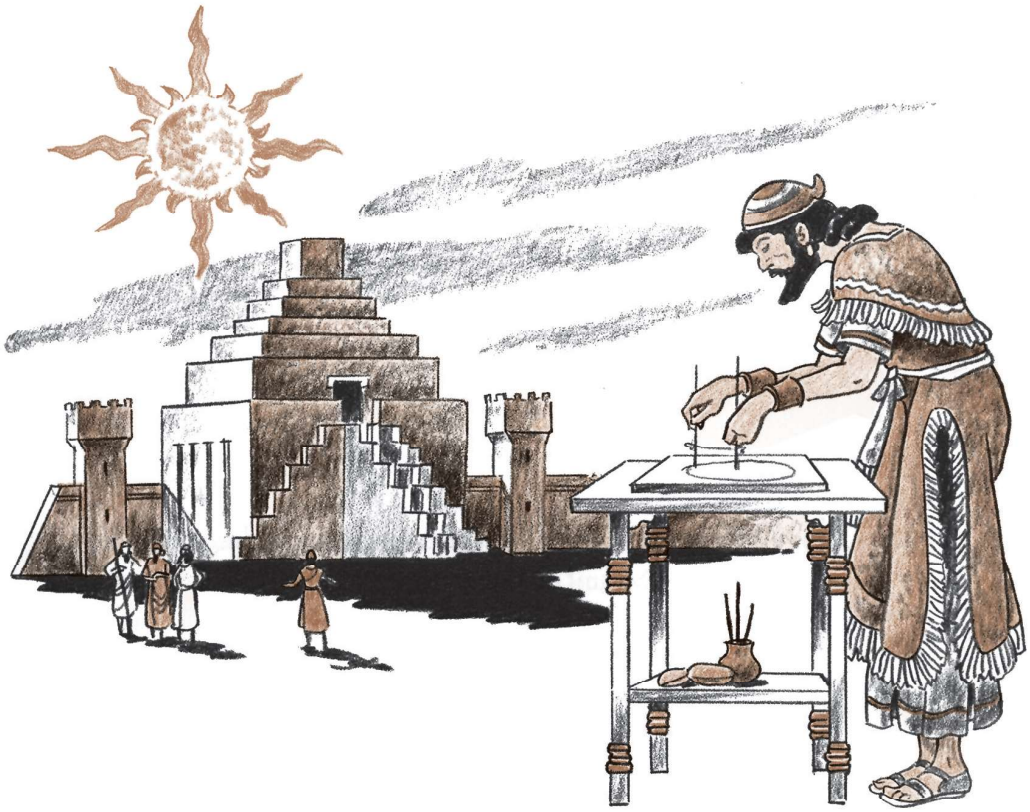

PROLOGUE

Three Wonderful Tools

The *string*, the *straightedge*, and the *shadow*—they are easy to find almost anywhere. A string can usually be found in a boy's pocket; a straightedge in a desk drawer. Shadows are constant companions on a sunny day.

Yet these are also three wonderful tools. Using them alone, ancient men discovered the ideas and constructions of elementary geometry more than twenty centuries ago. It was all done with just string, straightedge, and shadows! And that is the subject of this story.

3. SECRETS OF THE STONE AGE

Stone Age men—prehistoric men who chipped and flaked their tools from stone—used geometry in two great ways: in *technics*, to make life easier, and in *art* to make it more pleasant. For both uses, they borrowed geometric secrets from nature. They felt a sense of swift motion from the slanting line of a tree when it crashed to the ground. If it fell aslant another tree, they felt its strength as a brace. They felt the force of their own slanting positions as they pushed a heavy rock; they realized that it was easier to push a rock along level ground than it was to