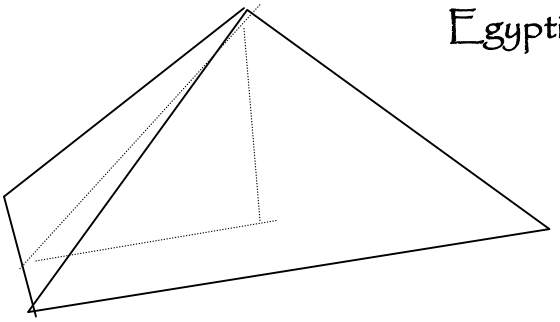
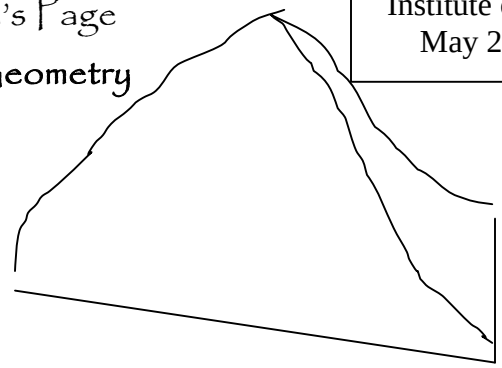
Children Just Like Me
Institute of Texan Cultures
May 27-Sept. 5, 2004

Mohammed's Page
Egyptian Geometry



Pyramid A

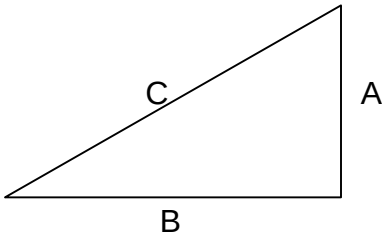


Pyramid B

Which pyramid was designed by an Egyptian who had studied geometry?

From the setting of the first layer of limestone blocks, the builder must know where in the sky above the peak is going to be! A slight error early on might result in a most unsatisfying tomb. What self-respecting pharaoh would want to be buried in Pyramid B?

Find the interior triangle in Pyramid A. In the Great Pyramid, the only remaining structure of the Seven Wonders of the Ancient World, that triangle is a *Pythagorean Triangle*; that is, the proportions of its three sides are 3:4:5; the angle between the two shorter sides is a right angle (90°).



Consider this Pythagorean Triangle. If side A is 3 inches, side B will be 4 inches, and side C will be 5 inches.
If side A = 6 inches, and side B = 8 inches, How long will side C be? _____

If side A is 30 inches, side B=40 inches, and side C=50 inches, we could also say
A = 2 feet 6 inches B =___ feet ___ inches C = ___ feet ____inches
Bonus: write your answers in *yards,* feet, and inches?

Egyptians did not measure in yards, feet, and inches. They used the following units beginning with the "digit," the width of one finger—probably the pharaoh's finger!

4 digits = 1 palm (think of the palm of your hand, four fingers wide)
7 palms = 1 cubit = 28 digits

In a Pythagorean Triangle, the sides might be A=3 digits, B=4 digits, C=5 digits. Since 4 digits =1 palm, we could also say A=3 digits, B=1 palm, C=1 palm, 1 digit.

Convert these Pythagorean Triangles from digits only to cubits, palms, and digits.

1. **A=6 digits B=8 digits C=10 digits**
   A= B= C=
2. **A=30 digits B=40 digits C=50 digits**
   A= B= C=

Bonus: A=6 palms B=1 cubit, 1 palm C= _____