EGYPTIAN GEOMETRY [6.3]

Units of Length:

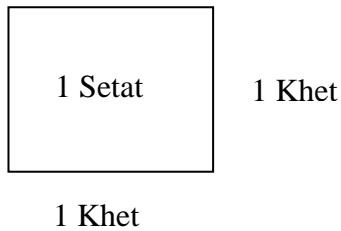Cubit   (1 cubit ≈ 21 in or 1.75 ft)

       1 cubit = 7 palms   (1 palm ≈ 7.5 cm or 3 in)

       1 palm = 4 fingers   (1 finger ≈ 1.9 cm or 0.75 in)

       1 khet = 100 cubits   (1 khet ≈ 175 ft)
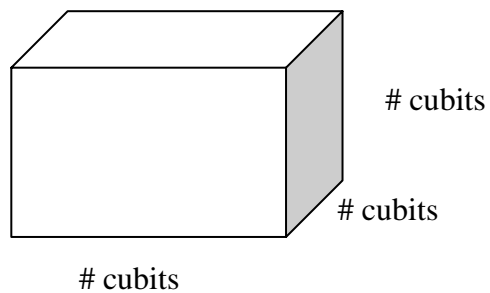
Area

Khet

1 Setat   1 Khet

1 Khet

Setat   1 Setat = 1 square khet
               = 10,000 square cubits
               ≈ 30625 square feet
               ≈ 3403 square yards

Volume

Khar   1 Khar = 2/3 cubic cubit
           1 cubic cubit = 1.5 khar

cubits

cubits

cubits

GREEK GEOMETRY [6.4]

The Seven Liberal Arts:
  1. Theory of Numbers
  2. Music   The Quadrivium of the
  3. Geometry   Pythagorean School
  4. Astronomy
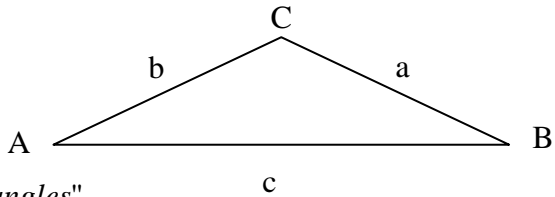
  5. Logic
  6. Grammar   The Trivium
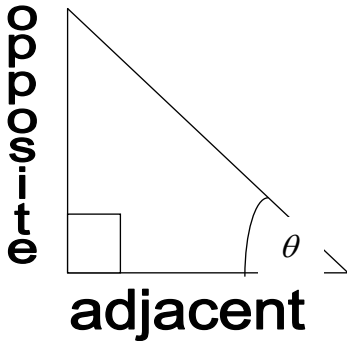 7. Rhetoric

Trigonometry

$A + B + C = 180°$

$P = a + b + c$

If $c = 90°$, *then* $A + B = 90°$ "*complementry angles*"

     and $a^2 + b^2 = c^2$ "*The Pythagorean Theorem*"

Trigonometric ratios for right triangles

$$\sin\theta = \frac{opp}{hyp} \qquad \sin 45° = \frac{1}{\sqrt{2}} \qquad \sin 30° = \frac{1}{2} \qquad \sin 60° = \frac{\sqrt{3}}{2}$$

$$\cos\theta = \frac{adj}{hyp} \qquad \cos 45° = \frac{1}{\sqrt{2}} \qquad \cos 30° = \frac{\sqrt{3}}{2} \qquad \cos 60° = \frac{1}{2}$$

$$\tan\theta = \frac{opp}{adj} \qquad \tan 45° = 1 \qquad \tan 30° = \frac{1}{\sqrt{3}} \qquad \tan 60° = \sqrt{3}$$