
FINDING ACCEPTANCE RANGES FOR THE SACRED CUT RATIOS

1. For each Sacred Cut Ratios, find *Acceptance Ranges* that you will use. Assume that the measurements are no more than 2% off and hence the measured *ratios* can be no more than 4% off from the Sacred Cut ratios to be considered acceptable.

Sacred Cut Ratio:	Acceptance Range
1	$0.96 \leq \frac{\text{measured width}}{\text{measured height}} \leq 1.04$
$\frac{1}{\sqrt{2}}$	$.679 \leq \frac{\text{measured width}}{\text{measured height}} \leq .735$
$\sqrt{2}$	$1.358 \leq \frac{\text{measured width}}{\text{measured height}} \leq 1.471$
$\sqrt{2} - 1$	$.398 \leq \frac{\text{measured width}}{\text{measured height}} \leq .431$
$1 - \sqrt{2}/2$	$.281 \leq \frac{\text{measured width}}{\text{measured height}} \leq .305$

FINDING ACCEPTANCE RANGES FOR THE SACRED CUT RATIOS

2. Remember that the measurements in the Garden Houses were 5,7, 17, 28, 41, and 58. For each ratio, decide whether or not it falls within an acceptance range.

ratio of measurements	Within an acceptance range?
$\frac{5}{7} \approx .714$	yes - $\frac{1}{\sqrt{2}}$
$\frac{5}{17} \approx .294$	yes - $1 - \sqrt{2}/2$
$\frac{7}{17} \approx .412$	yes - $\sqrt{2} - 1$
$\frac{7}{28} = .25$	no
$\frac{17}{7} \approx 2.429$	no
$\frac{17}{28} \approx .607$	no
$\frac{17}{41} \approx .415$	yes - $\sqrt{2} - 1$
$\frac{17}{58} \approx .293$	yes - $1 - \sqrt{2}/2$
$\frac{28}{17} \approx 1.65$	no
$\frac{28}{41} \approx .683$	yes - $\frac{1}{\sqrt{2}}$
$\frac{28}{58} \approx .483$	no
$\frac{41}{28} \approx 1.464$	yes - $\sqrt{2}$
$\frac{41}{58} \approx .707$	yes - $\frac{1}{\sqrt{2}}$
$\frac{58}{41} \approx 1.415$	yes - $\sqrt{2}$