

Welding: Hibachi Grill Project

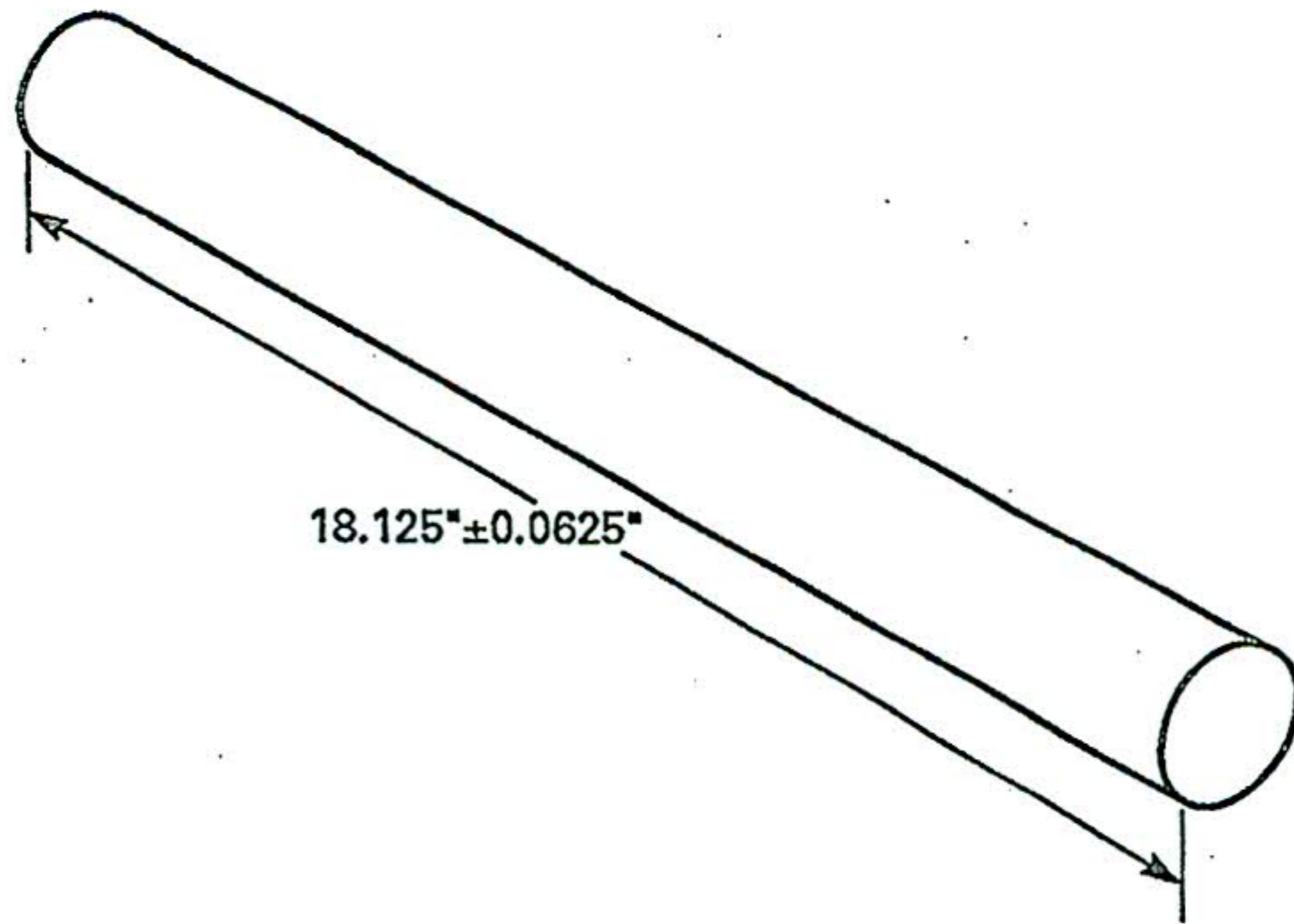
Tolerances:

Tolerance is the amount over or under a given measurement that is allowed for a fit-up

The given dimension *plus* the tolerance gives the longest length (or thickness) allowed.
 The given dimension *minus* the tolerance gives the shortest length (or thinness) allowed.

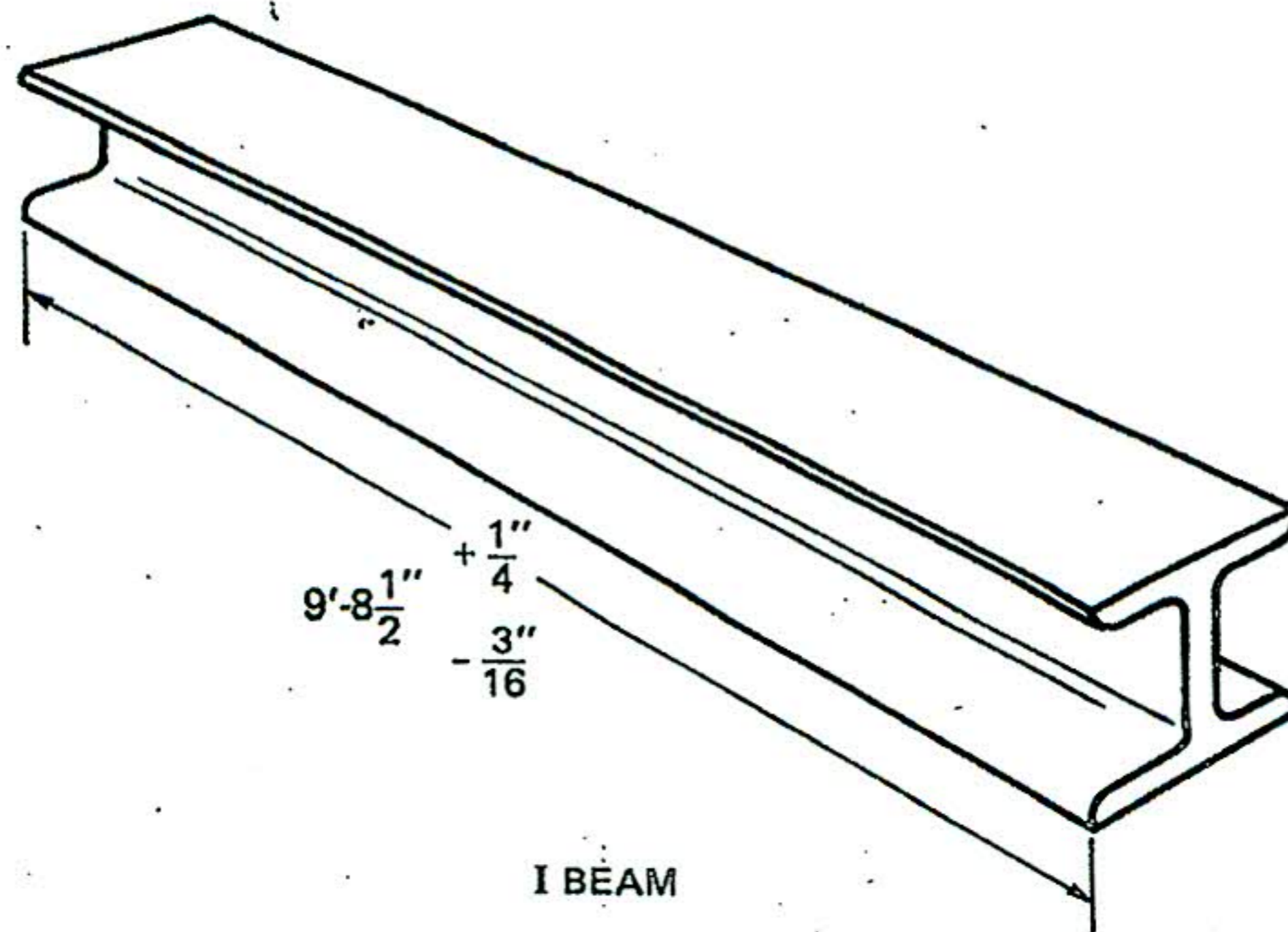
Example:

$$\begin{array}{r}
 A = 18.1250 \\
 + 0.0625 \\
 \hline
 18.1875 \\
 \\
 B = 18.1250 \\
 - 0.0625 \\
 \hline
 18.0625
 \end{array}$$

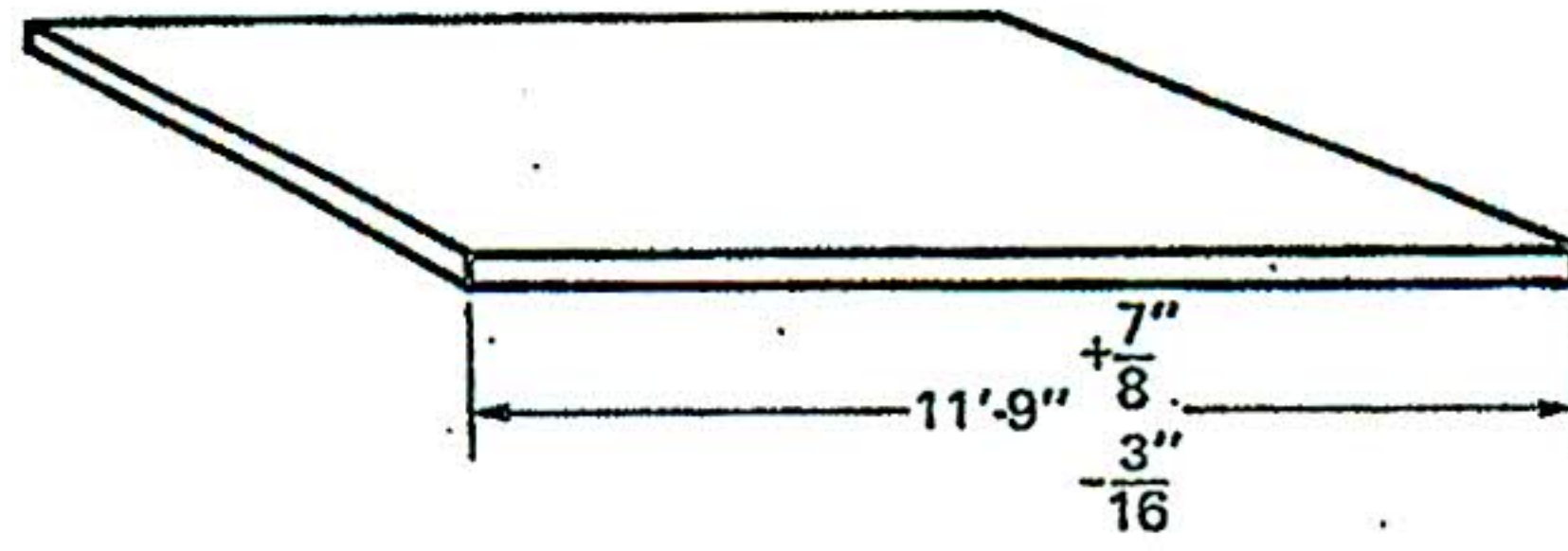


PRACTICAL PROBLEMS

Using the given tolerances, find A, the longest possible length, and B, the shortest possible length.



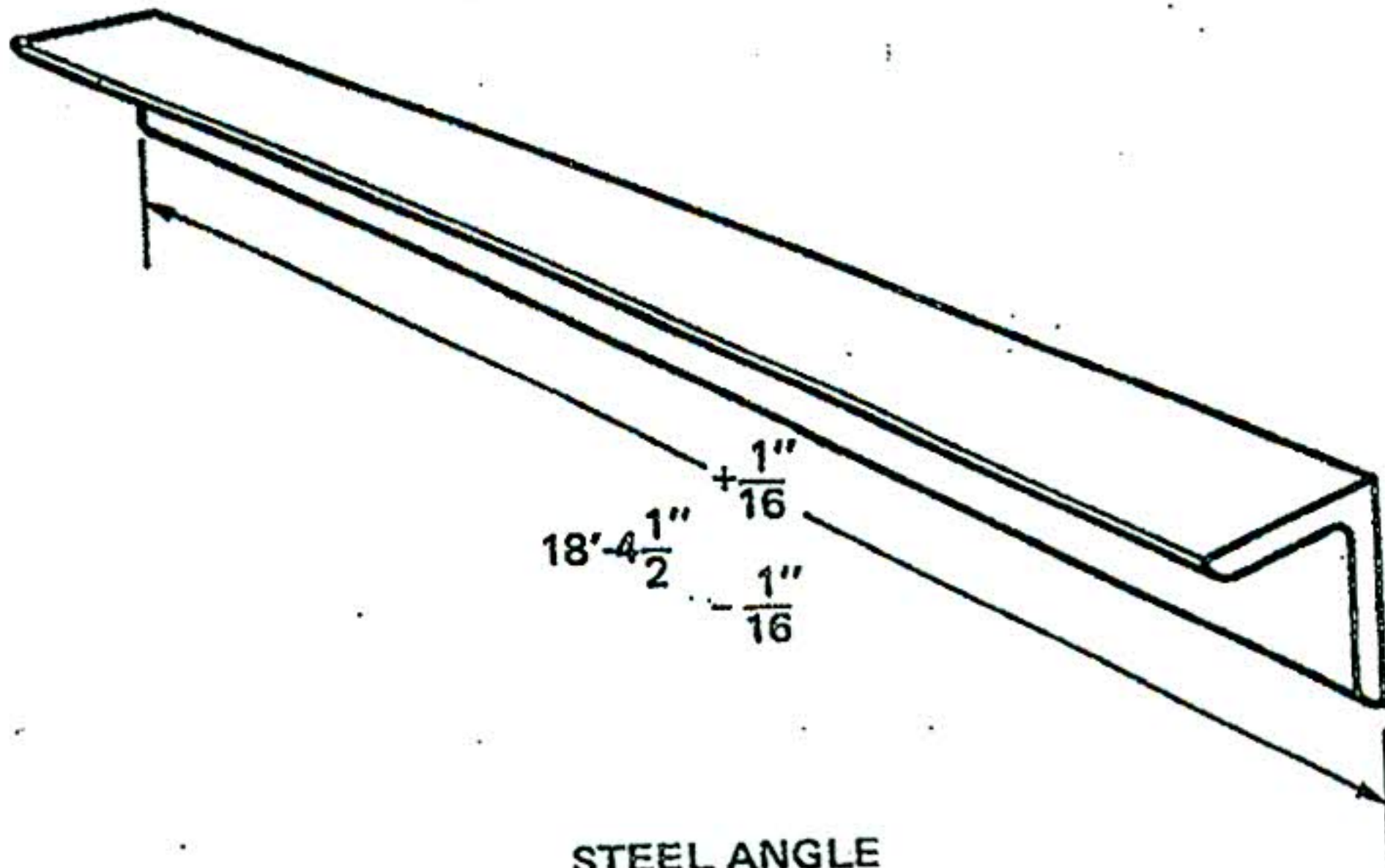
A = _____
 B = _____



RECTANGULAR STEEL PLATE

A = _____

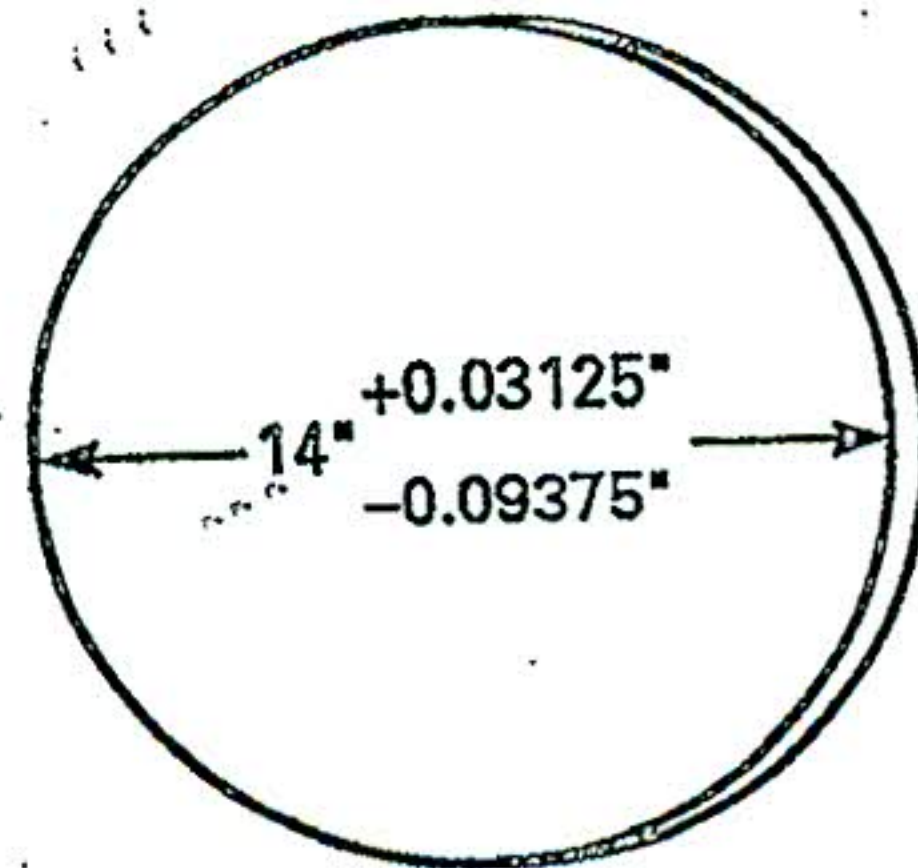
B = _____



STEEL ANGLE

A = _____

B = _____



A = _____

B = _____

PERCENTAGE

A percent of a number is a method of expressing some part of whole numbers with a base of 100; for example, 100% of a number is all of it. And 25% is 25.

Example: Before a 20% price reduction, a gas welding tip sold for \$48. What was the tip's price after the reduction. *note: think of it was a 10% price reduction and it would be $48.00 - 4.80 = \$43.20$ so what is a 20% price reduction? > Twice the dollar amount of a 10% ($2 \times 4.80 = \$9.60$)

ANSWER \$38.40

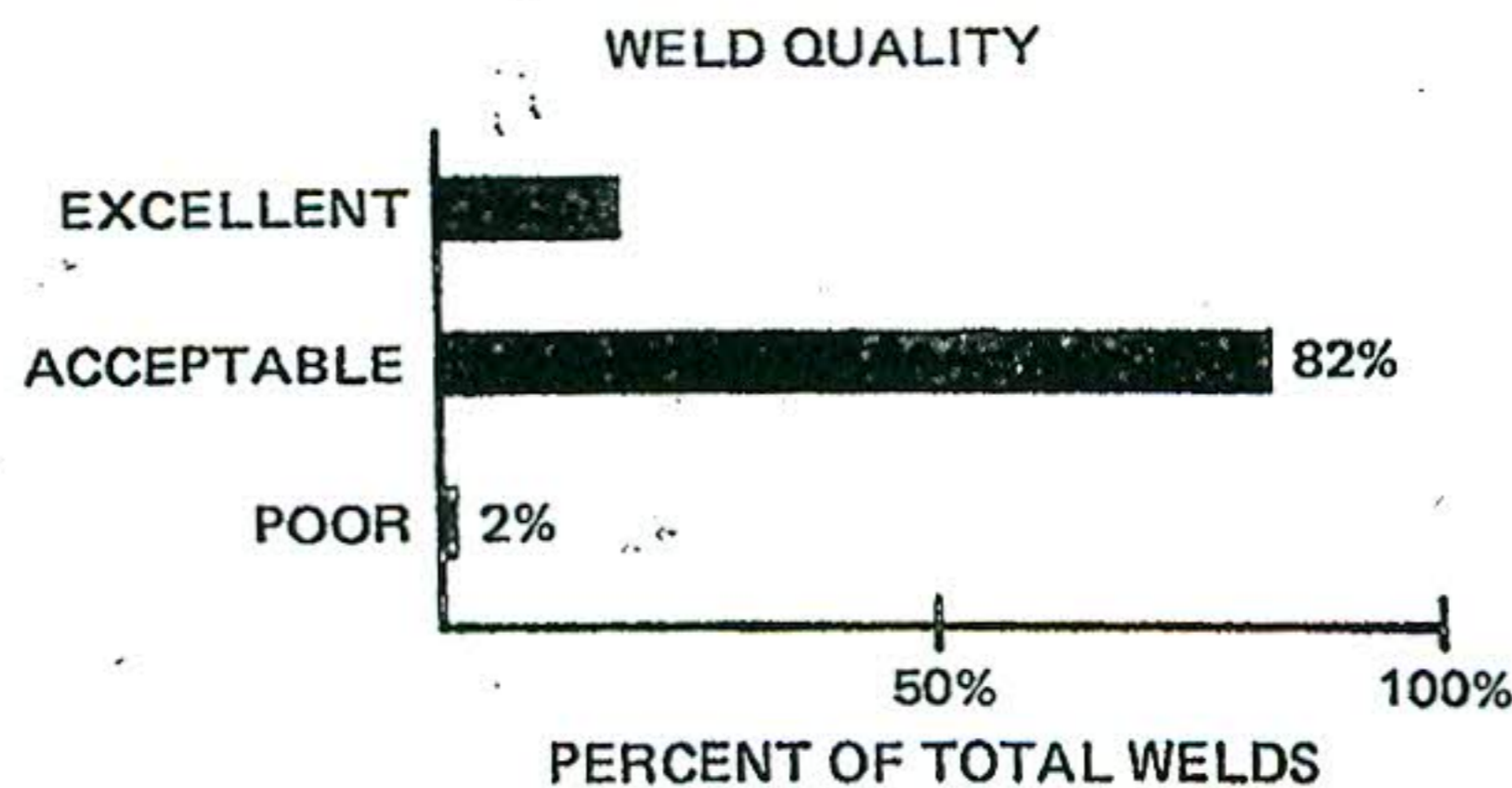
Before a 30% reduction, you purchase a welding jacket for \$30.80. What was the jacket's price after the reduction?

\$ _____

The area of a piece of steel is 1446.45 square inches. How many square inches are contained in 25% of the steel?

A welder completes 87% of 220 welds. How many completed welds are made?

A total of 116,000 welds are made in a welding shop. This graph of the quality of the welds is made.



a. How many welds are of poor quality?

a. _____

b. How many welds are acceptable?

b. _____

c. How many welds are of excellent quality?

c. _____

In a mill, 10,206 steel plates are sheared. By inspection, 20% of the plates are rejected. Of the amount that are rejected, 8% are scrapped.

a. How many complete steel plates are rejected?

a. _____

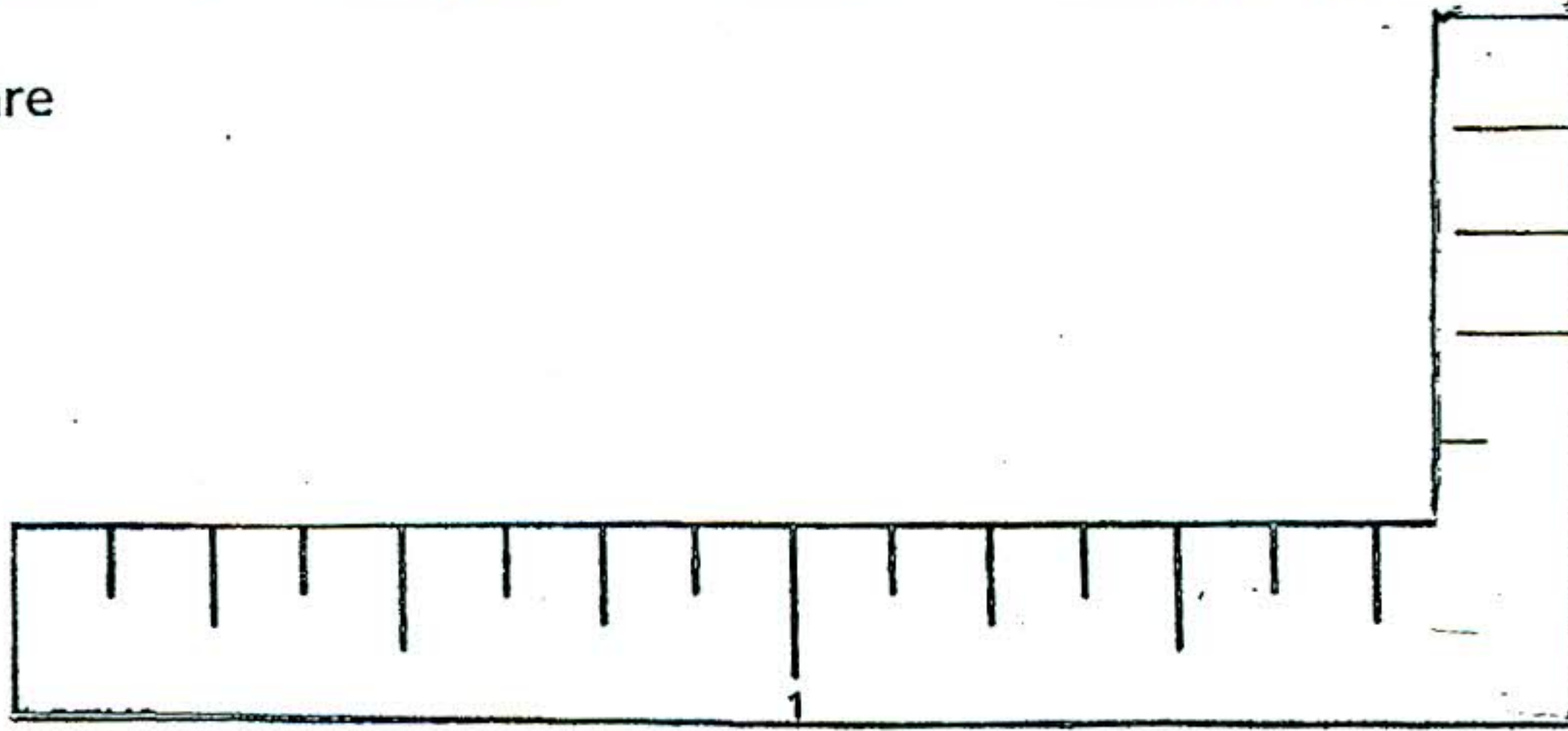
b. How many of the rejected plates are scrapped?

b. _____

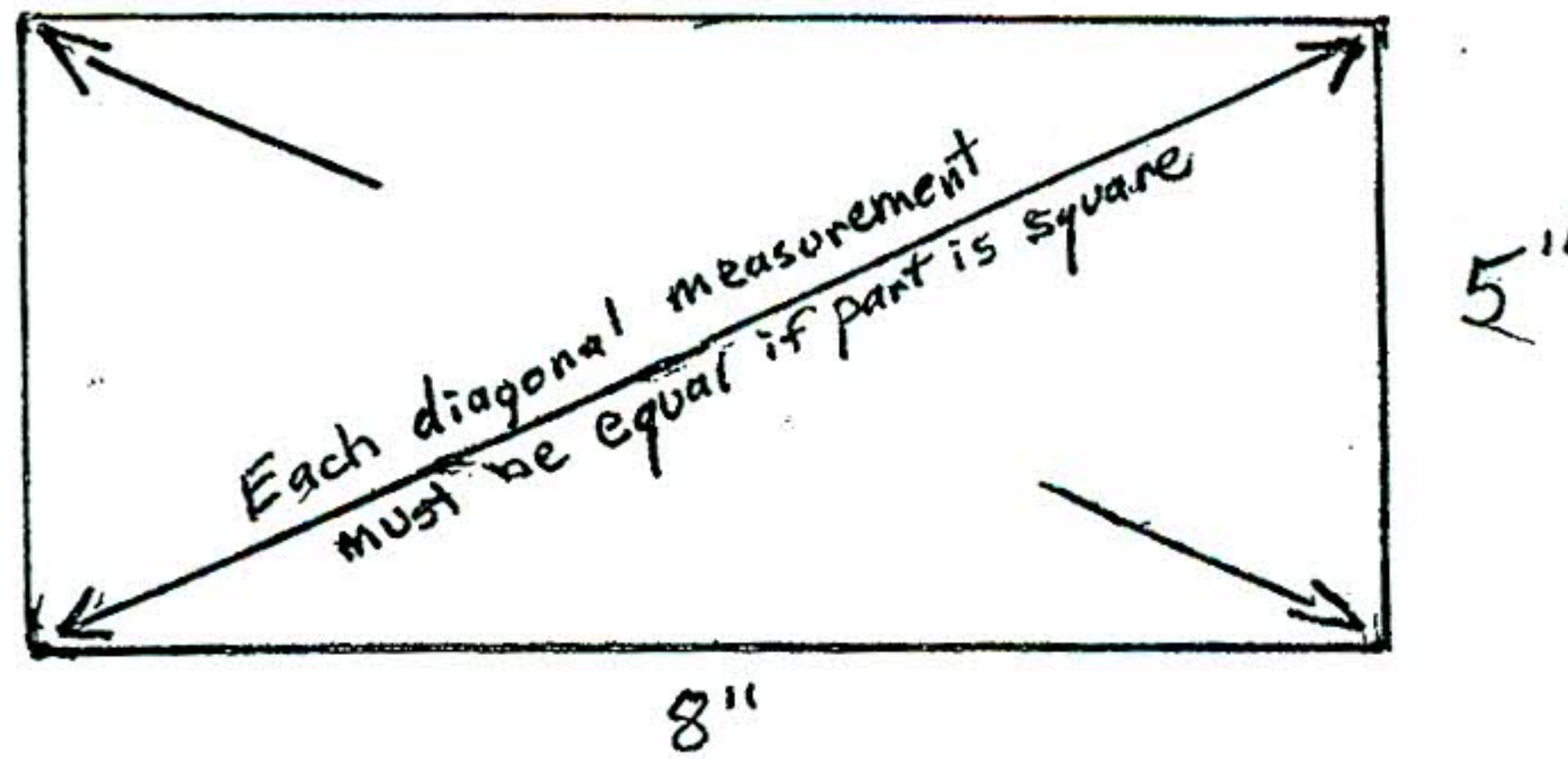
SQUARING

To ensure an assembly is square both before and after welding, three easy methods are used;

1. Tool - Square



2. Tool - Tape measure used to diagonally measure part (part must have two opposite sides the same length);



3. Tool - Tape measure and the "3" & "4" & "5" rule;

