

AN ODD
LETTER
FROM KIT
TO JOHN

BY KIT D. COOPER

8 MARCH 1990

JOHN,

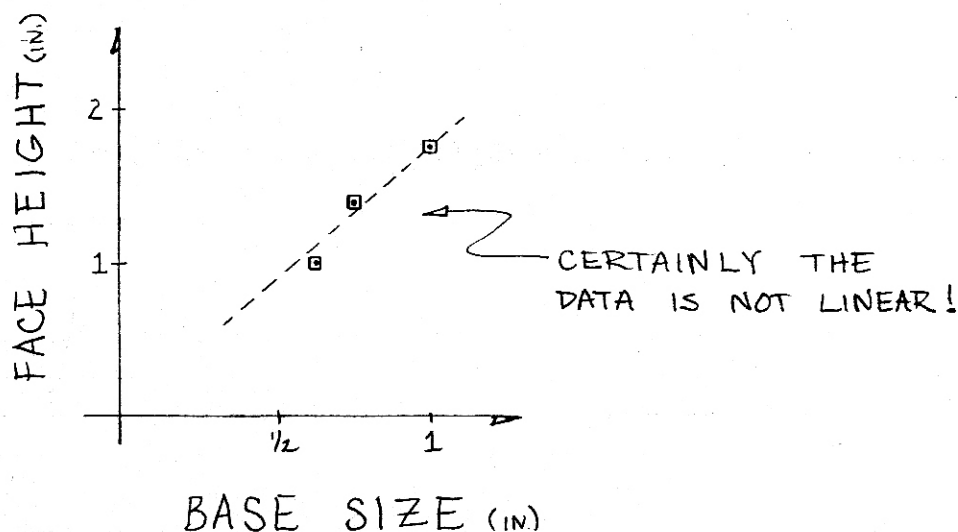
SINCE A FEW DAYS AFTER I GOT MY ICEHOUSE SET, I'VE BEEN WONDERING WHAT WAS ON YOUR MIND AS YOU DETERMINED PIECE SIZE. I'VE COME TO THE CONCLUSION THAT A SMALL MAN ON CRUTCHES HELPED YOU - AND HE HELD ONE CRUTCH IN HIS MOUTH AND ONE UNDER HIS ARM AS HE COMPUTED PYRAMID SIZE.

AT FIRST, I THOUGHT THE BASE SIZE (SEE PAGES 3,4) WOULD BE OBVIOUS, MUCH LIKE PYRAMID POINT VALUE. THE TWO-POINT PIECE BEING THREE-FOURTHS OF THE THREE-POINT PYRAMID LED ME TO BELIEVE THAT THE ONE-POINT PIECE WOULD BE EITHER NINE-SIXTEENTHS ($\frac{9}{16} = \frac{3}{4} \cdot \frac{3}{4}$) OR ONE-HALF ($\frac{1}{2} = 1 - \frac{1}{4} - \frac{1}{4}$). SO I MEASURED IT. FIVE-EIGHTHS? IS THIS LEGAL?

SO, I CONDUCTED THE FOLLOWING TEST TO THE BEST OF MY ABILITY:

PIECE (POINTS)	FACE HEIGHT (A) (INCHES)	BASE SIZE (B) (INCHES ALSO)
1	1	$\frac{5}{8}$
2	$1\frac{3}{8}$	$\frac{3}{4}$
3	$1\frac{3}{4}$	1

NOW, IF WE CONSIDER BASE SIZE TO BE THE INDEPENDENT VARIABLE AND FACE HEIGHT DEPENDENT -



FROM HERE, TWO POSSIBILITIES EMERGE -

- ① THE FACE HEIGHT WAS MEANT TO INCREASE $\frac{3}{8}$ " AS PIECE VALUE INCREASED - IN WHICH CASE FACE HEIGHT WAS THE DETERMINING FACTOR.
- ② THE BASE SIZE WAS MEANT TO INCREASE BY $\frac{1}{8}$ " AND THEN BY $\frac{2}{8}$ " AS PIECE VALUE INCREASED... SO BASE SIZE WOULD BE THE DETERMINING FACTOR.

THE EQUATION FOR ① IS $FH = \frac{5}{8} + P(\frac{3}{8})$ INCHES

WHERE FH IS FACE HEIGHT

AND P IS POINT VALUE, $P=1,2,3,\dots$

THE EQUATION FOR ② IS $BS = \frac{4 + (2)^{(P-1)}}{8}$ INCHES

WHERE BS IS BASE SIZE

AND P IS POINT VALUE, $P=1,2,3,\dots$

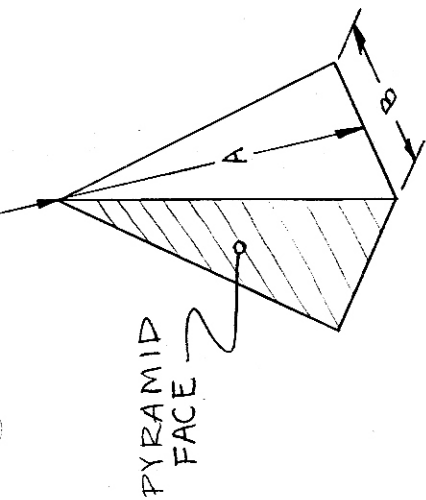
WE CAN ALL TELL THAT THESE DO NOT VARY IN THE SAME WAY.

THERE WERE MORE POSSIBILITIES:

- ① THE AREA OF EACH WAS A FUNCTION OF VALUE - THIS WAS FALSE AND WOULD BE RIDICULOUS.
- ② THE PIECES WERE MEANT TO DESCEND IN A STRAIGHT LINE WHEN SITTING SIDE BY SIDE (ALSO SOMEWHAT RIDICULOUS) - SEE PAGES 3,4.
- ③ THE PIECES WERE MEANT TO BE SIMILAR PYRAMIDS, AND (THEREFORE) SIMILAR TRIANGLES, BUT THE MAN ON CRUTCHES KEPT WIGGLING.

IN ANY CASE, ONLY ONE OF THE LETTERED POSSIBILITIES AND ONE OF THE NUMBERED POSSIBILITIES CAN EXIST AT ONCE. NEGLECTING THE POSSIBILITY THAT ① - THE SIZES WERE ARBITRARY, I CREATED THE NEXT TWO PAGES OF FIGURES TO SHOW THE DIFFERENT CHOICES AVAILABLE; CURRENT, PROPOSED, AND STRAIGHT LINE FOR CASES ① - BASE SIZE VS. FACE HEIGHT, AND ② - FACE HEIGHT VS. BASE SIZE. THE PROPOSED CHANGES WOULD MAKE THE PYRAMIDS SIMILAR (EQUAL ANGLES) SO THEY WOULD STACK OR SIT MORE EVENLY. I AM PARTIAL TO THE BASE SIZE VS. FACE HEIGHT POSSIBILITY BECAUSE THE BS EQUATION USES EXPONENT "P MINUS ONE."

TO COMPUTE THE SIMILAR TRIANGLES, I USED THE THREE-POINT PYRAMID AS THE STANDARD ($FH=1.75$, $BS=1$). TO COMPUTE THE STRAIGHT LINE METHOD, THE PYRAMIDS WERE PLACED SIDE BY SIDE AND A LINE DRAWN FROM THE TOP OF THE THREE-POINT TO THE TOP OF THE ONE-POINT.

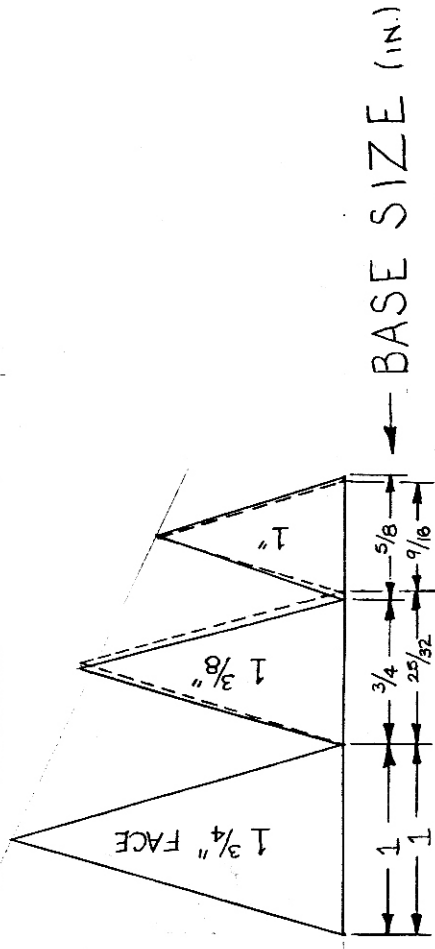


PYRAMID
FACE

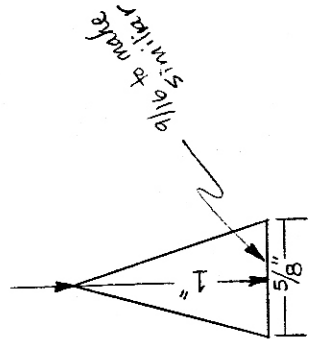
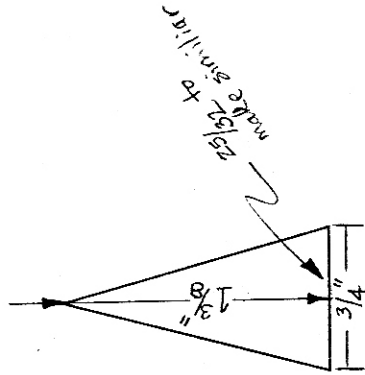
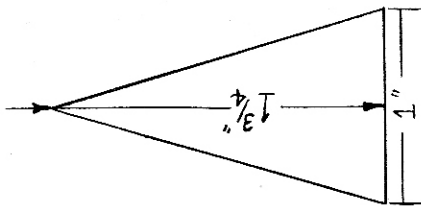
A - FACE HEIGHT
B - BASE SIZE

FACE HEIGHT (IN)

ICEHOUSE SET (CURRENT)
PROPOSED SIMILIAR PYRAMIDS
STRAIGHT
LINE METHOD



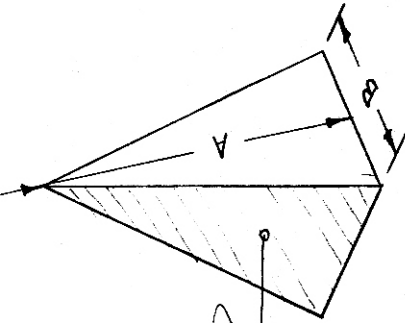
BASE SIZE (IN.)



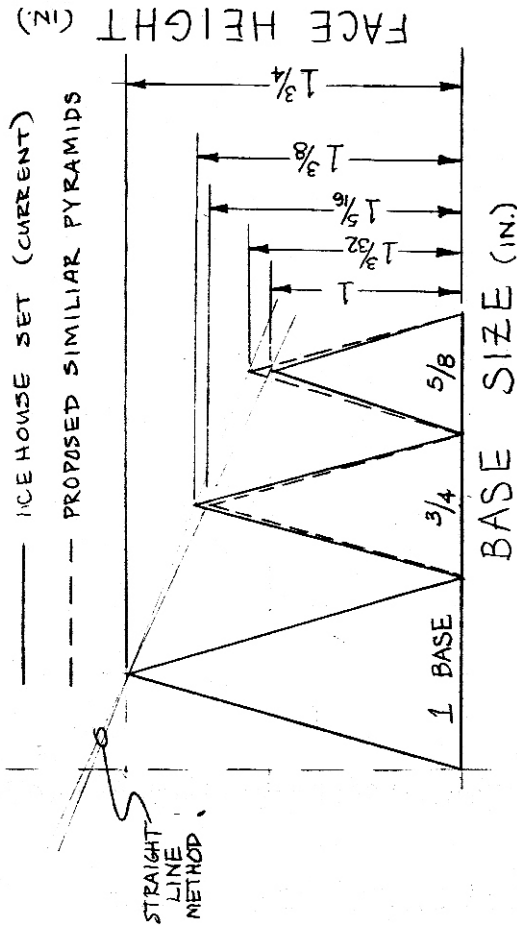
'HOUSE PYRAMID FACE SIZE

① BASE VS. FACE
(CURRENT FH VALUES REMAIN)

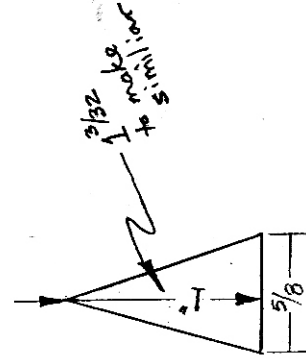
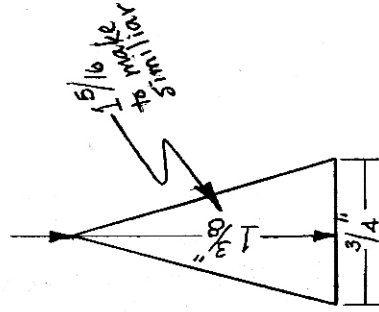
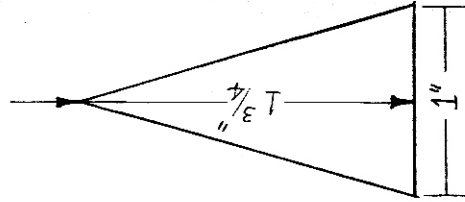
PYRAMID
FACE



A - FACE HEIGHT
B - BASE SIZE



THE FACE HEIGHT
(A) WAS USED
BECAUSE THIS
MEASUREMENT,
NOT PYRAMID HEIGHT,
WAS DETERMINED TO
BE MORE IMPORTANT
TO THE GAME.



'HOUSE PYRAMID FACE SIZE

② FACE VS. BASE
(CURRENT BS REMAIN)

OF COURSE, IT IS OBVIOUS THAT POSSIBILITY ②, ③ IS THE CORRECT CHOICE. NOT ONLY DO THE PYRAMID BASE SIZE AND FACE HEIGHT VARY WITH A NEAT EQUATION: $BS = \frac{4}{7} FH = \frac{4 + (2)^{P-1}}{8}$, BUT THE PYRAMIDS ARE SIMILAR TOO.

IF YOU ARE DEAD SET ON USING ② - THE STRAIGHT LINE METHOD, REASONABLE VALUES WERE OBTAINED ON THE "FACE VS. BASE" CHART (PAGE 4.)

SUGGESTED PYRAMID FACE VALUES

PIECE (POINTS)	FACE HEIGHT (A) (IN.)	BASE SIZE (B) (IN. ALSO)
1	$1 \frac{3}{32}$	$\frac{5}{8}$
2	$1 \frac{5}{16}$	$\frac{3}{4}$
3	$1 \frac{3}{4}$	1

OH YEAH, THE REASON I MEASURED THEM WAS TO FIND OUT HOW MUCH 100 WOODEN VARNISHED SETS WOULD COST - I'LL TELL YOU LATER. ALSO, "READ PLASTICS" IS ONE OF THE NATION'S LARGEST PLASTIC COMPANIES - COULDN'T THEY MAKE GOOD PIECES?

-KIT D. COOPER



PS - I'M BORED. WHY ELSE WOULD I BE MEASURING PLASTIC PIECES AND WRITING THIS ODD LETTER TO YOU? SEE YOU AT EGG BREAK.

- 30 PT. PIECES ARE IMPRACTICAL

(FH = 1853 miles, 2869 ft., $4 \frac{7}{8}$ in.;

BS = 1059 miles, 885 ft., $4 \frac{1}{2}$ in.)

- AREN'T YOU GLAD YOU'RE NOT BORED ALSO?

- I DIDN'T MEAN TO KNOCK YOUR SETS, BUT 2 OR 3 PIECES ARE ALREADY BROKEN.