

## A TRUE PYRAMID

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The term “pyramid” is used in two ways in logology: 1) a “word pyramid” is a word ladder in which each step adds a letter--eg, I IN FIN FIND FIEND FRIEND; 2) a “pyramid word” has an abstract ‘pyramid’ of letter frequencies--eg, REMEMBERER with 1B, 2Ms, 3Rs, 4Es. Both of these misuse the word pyramid to mean *triangle*. A pyramid is three dimensional--a polygonal base with triangular sides that meet at a point. The base can have three or any higher number of sides but it’s usually thought of as a square because of the Egyptian pyramids.

In a true word pyramid all edge letters are common to two triangles, with the top letter common to all. I leave to others the challenge of building the tallest pyramid and here give a single example, a square with eight tiers. It’s presented as two corner views, say Southeast and Northwest. The top five tiers are “perfect”, like the triangle above, in that no rearrangement of letters is involved, but the bottom three tiers involve some transposals. Any taller pyramid is also likely to require transposals.

A A	A A
AD DA	AT TA
<u>DAD DAM</u>	<u>MAT TAD</u>
DEAD DRAM	MAST TRAD
DREAD DREAM	MASTS STRAD
DARTED DREAMS	STEAMS STRAND
REDATED DAMMERS	STREAMS STANDER
RETARDED DRAMMERS	STAMMERS STRANDER

DAD	DAM	MAT	TAD
AHA	AHA	AHA	AHA
TAM	DAT	DAD	MAD

A more difficult challenge is to make a word square of the base. The problem is illustrated by the four squares above, bases for the underlined 3-tier pyramid topping the 8-tier one. Note that the base is not rimmed by the same four words as the sides. Two are the same but two are reversals. Which two depends on orientation. In this miniature version all orientations produce a word square, but for larger pyramids it may be necessary to designate a single orientation and/or to allow reversed spellings of some words even when not themselves words--unless two of the bottom words are palindromes or have words as reversals.

A further, perhaps impossible challenge is to make all four (or five!) faces sentential, like “I in fin find fiend friend.”, or otherwise to make the words of each face related. Ideally, but surely impossible, make all the faces related to each other in some way.

All the above words are in *Chambers Official Scrabble Words* except “dat”, a dialect form of “that”, in Macquarie Dictionary, and “drammers”, drinkers, in Web-3.