Five Degrees of Rationality

Give examples of quadrilaterals that each have an area of exactly 8 square units and that have exactly zero, 1, 2, 3 or 4 rational side measure(s). Make sketches and label the side measures and any other significant measures. Show details of your calculations.

An extension of a G. Polya poser from the *Stanford Math Problem Book*.

Solutions

One possible set of solutions:

12-	A c qua	uadrilateı ıds with e	al must xactly O,	have 1, 2,	ratio 3 an	nal ar d 4 r	rea 8 ation	squa al sid	re units. e measu	Give e res.	example:	sof	
10-		1				ľ					-		
8-	. 8 sq. u	nits 2.	5	2	√2	8	sq un	its			8 :	sq un ts	5
6-						<u>هــــــــــــــــــــــــــــــــــــ</u>	2./2	•					
4-							2	2.√2	_	8 sq	units		
2-	8 sq units	2.52	•		2	<u> </u>	<u>_</u> 2	-	5.√2	-	~		
		5			1	0				5			20
-2													