

MA416 Weekly Challenge 7

Let R be set of diagonal matrices in $M_2(\mathbb{Z})$ (as in Challenge 5). Give an example of a pair of maximal ideals of R whose intersection is a prime ideal of R .

Please upload your answer to the Canvas “Challenge 7” assignment by Friday November 22. You do not need to type it (a photograph is fine). Explain your example as clearly as you can, so that it would be interesting and informative for a reader. Cite any sources that you use.