

## MA416 Weekly Challenge 1

Give an example of a ring  $R$  and a subset  $S$  of  $R$  with the property that  $S$  is itself a ring with the same operations as  $R$ , but the multiplicative identity element of  $S$  is not the same as the multiplicative identity of  $R$  (and also not the zero element of  $R$ ).

Please upload your answer to the Canvas “Challenge 1” assignment by Friday September 27. 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.