Homework 6

p108: B1, B2, B3, B4, B6

1. **p108. B1** What is the order of 10 in $\mathbb{Z}_{25}$?

   Solution.

2. **p108. B2** What is the order of 6 in $\mathbb{Z}_{16}$?

   Solution.

3. **p108. B3** What is the order of the following in S_6?

   $$f = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 6 & 1 & 3 & 2 & 5 & 4 \end{pmatrix}$$

   Solution.

4. **p108. B4** What is the order of 1 in $\mathbb{R}^*$? What is the order of 1 in $\mathbb{R}$?

   Solution.

5. **p108. B6** Can an element of an *infinite* group have *finite* order? Explain.

   Solution.