E3 homework

Answer all questions. Use the Data Booklet. Total: 10 marks.

1 12 V, 0.5 A for 2 min. **Calculate** E_e. **[2]**

2 V = 6 V, R = 12 Ω. **Calculate** P. **[2]**

3 I = 2 A, R = 5 Ω. **Calculate** P. **[2]**

4 P_{in} = 80 W, useful 60 W. **Calculate** η. **[1]**

5 E_{in} = 1000 J: 700 J light, 50 J sound. **Calculate** heat loss. **[1]**

6 **Explain** one way to reduce losses in a motor. **[2]**