Worksheet 10: Euclidean domains

1. What does it mean for an integral domain to be a Euclidean domain?
2. Divide $1+8 i$ by $2-4 i$ in $Z[i]$. Can you find more than one possible quotient and remainder?
3. In $\mathbb{Z}[x]$, the ideal $\left(2 x^{2}-4,4 x-5\right)$ is not principal. However, this ideal is principal in $R[x]$. What is it generated by?
