Galois Theory (2nd edition)–Errata

Page 3, line -4: $\varphi(\psi^2(\sqrt[3]{2})$ should be $\psi(\varphi^2(\sqrt[3]{2})$

Page 5, line -8: so σ^2 does not fix $\mathbf{B}$ should be so σ does not fix $\mathbf{B}$

Page 10, line 12: $\Phi(X) = X^p$ should be $\Phi(a) = a^p$ for any $a \in \mathbf{F}$

Page 15, lines 13-21: $d(x)$ and $\tilde{d}(x)$ should be interchanged throughout

Page 18, line 20 : $\deg r(X) < d$ should be $r(X) = 0$ or $\deg r(X) < d$

Page 24, line -1: $\mathbf{F}(\sigma_1)$ should be $\mathbf{F}(\alpha_1)$ and $\mathbf{F}(\sigma_2)$ should be $\mathbf{F}(\alpha_2)$

Page 28, lines -10 and -4: $m_\alpha(X)$ should be $f(X)$

Page 29, line 11: as $\sigma_i(\tilde{m}_\alpha(X)) \in \mathbf{B}[X]$ should be as $\tilde{m}_\alpha(X)) \in \mathbf{B}[X]$

Page 34, line 11: between $\mathbf{E}$ and $\mathbf{B}$ should be between $\mathbf{E}$ and $\mathbf{F}$

Page 34, line -7: equivalent should be equivalently

Page 35, line 5: $\Lambda(\sigma) = [\sigma_0]$ should be $\Lambda(\sigma_0) = [\sigma]$

Page 35, line 8: $\Lambda(\sigma) = [\sigma_0]$ should be $\Lambda(\sigma_0) = [\sigma]$ and $\Lambda(\tau) = \tau_0$ should be $\Lambda(\tau_0) = [\tau]$

Page 35, line 9: $\Lambda(\sigma\tau) = [\sigma_0\tau_0]$ should be $\Lambda(\sigma_0\tau_0) = [\sigma\tau]$

Page 35, line 10: should read $(\sigma G_{\mathbf{B}})(\tau G_{\mathbf{B}}) = \sigma\tau G_{\mathbf{B}}$, i.e., $[\sigma][\tau] = [\sigma\tau]$ so $\Lambda(\sigma\tau) = \Lambda(\sigma)\Lambda(\tau)$

Page 35, lines -14 and -13: b should be β

Page 36, line -10: Let $\mathbf{E}$ be a Galois extension of $\mathbf{F}$ of degree d. should be Let $\mathbf{E}$ be a Galois extension of $\mathbf{F}$ that is a splitting field of a polynomial of degree d.

Page 38, line 3: i is superfluous

Page 38: One subgroup was overlooked in the analysis of the group G. This has the following consequences:

Line 5: 15 subgroups should be 16 subgroups

Line 6: the normal subgroups of G are A_1, D_1, E_1, G_1, H_1, I_1, and J_1

In the lists of subgroups, fixed fields, and splitting fields, add

$$H_1 = \{1, \tau^2, \tau^4, \tau\sigma, \tau^3\sigma, \tau^5\sigma\}$$

with $\mathrm{Fix}(H_1) = \mathbf{Q}(i)$ and $\mathrm{Fix}(H_1) =$ splitting field of $X^2 + 1$, and rename the existing H_1 and I_1 to be I_1 and J_1 respectively.

Page 38, line 13: insert { after the first = sign

Page 43, Exercise 2.10.14: Assume that $\mathbf{E}$ is an algebraic extension of $\mathbf{F}$.

Page 43, Exercise 2.10.16: Assume that $f(X)$ and all of its factors are monic polynomials.

Page 57, line 15: $\mathbf{D}$ should be $\mathbf{B}$

Page 64, line -5: Corollary 3.4.6 should be Theorem 3.4.7

Page 68, line 17: $\mathbf{F} = \mathrm{Fix}(H)$ should be $\mathbf{B} = \mathrm{Fix}(H)$

Page 68, lines -3 and -2: $\sigma_2(\alpha_2) - \alpha_2$ should be $\alpha_2 - \sigma_2(\alpha_2)$

Page 118, line 9: $x \in \mathbf{Q}(\sqrt{\alpha_1}, \ldots, \sqrt{\alpha_{t-1}})$ should be $x \in \mathbf{Q}(\sqrt{\alpha_1}, \ldots, \sqrt{\alpha_{t-2}})$

Page 140, Exercise 4.10.19 (a): Show that, for k sufficiently large, should be Show that