Errata: Introduction to algebraic geometry
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page 1, line 8:
Ending comma should be a period, i.e., change '$|\alpha| = \alpha_1 + \ldots + \alpha_n$,' to '$|\alpha| = \alpha_1 + \ldots + \alpha_n$.'

page 9, line 6: Exercise 1.7:
Change the first line 'Consider the morphism' to 'Let k be an infinite field. Consider the morphism'

page 10, line 3: Exercise 1.11.b:
'ϕ' should be 'ϕ^*'

page 32, line 11 Exercise 2.18.d:
Remove the following text: '*Hint:* Consider chains

$$m \supset m^2 \supset m^3 \ldots \supset p$$

where p is a nonmaximal prime and $m \supset p$ is maximal.'

page 49, line 9 from bottom:
The expression

$$k[W] = k[x_1, x_2, x_3, x_4, x_5] / \langle x_1(x_5 - 1), x_2(x_5 - 1), x_3x_5, x_4x_5 \rangle$$

should read

$$k[W] = k[x_1, x_2, x_3, x_4, x_5] / \langle x_1(x_5 - 1), x_2(x_5 - 1), x_3x_5, x_4x_5, x_5(x_5 - 1) \rangle$$

page 75, line 5:
The typography of the displayed equation

$$\mathrm{Res}(f, g) = \det \begin{pmatrix} a_m & a_{m-1} & \ldots & a_0 & 0 & 0 & \ldots & 0 \\ 0 & a_m & a_{m-1} & \ldots & a_0 & 0 & \ldots & 0 \\ 0 & 0 & \ddots & \ddots & \ldots & \vdots & \vdots & 0 \\ 0 & 0 & \ldots & 0 & a_m & a_{m-1} & \ldots & a_0 \\ b_n & b_{n-1} & \ldots & b_0 & 0 & 0 & \ldots & 0 \\ 0 & b_n & b_{n-1} & \ldots & b_0 & 0 & \ldots & 0 \\ 0 & 0 & \ddots & \ddots & \ldots & \vdots & \vdots & 0 \\ 0 & 0 & \ldots & 0 & b_n & b_{n-1} & \ldots & b_0 \end{pmatrix}.$$

is confusing. It would be better to write:

$$\mathrm{Res}(f,g) = \det \begin{pmatrix} a_m & a_{m-1} & \dots & a_1 & a_0 & 0 & \dots & 0 \\ 0 & a_m & a_{m-1} & \dots & a_1 & a_0 & \ddots & \vdots \\ \vdots & \ddots & \ddots & \ddots & \ddots & \ddots & \ddots & 0 \\ 0 & \dots & 0 & a_m & a_{m-1} & \dots & a_1 & a_0 \\ b_n & b_{n-1} & \dots & b_1 & b_0 & 0 & \dots & 0 \\ 0 & b_n & b_{n-1} & \dots & b_1 & b_0 & \ddots & \vdots \\ \vdots & \ddots & \ddots & \ddots & \ddots & \ddots & \ddots & 0 \\ 0 & \dots & 0 & b_n & b_{n-1} & \dots & b_1 & b_0 \end{pmatrix}.$$

page 76, lines 6-7:
The expression

$$\delta_0(d)(A,B) = (r_{d-m},\dots,r_0,s_{d-n},\dots,s_0)\cdot \begin{pmatrix} \overbrace{\begin{matrix} a_m & \dots & a_0 \\ 0 & a_m & \dots \\ 0 & 0 & \ddots \\ 0 & 0 & \dots \\ b_n & \dots & \dots \\ 0 & b_n & \dots \\ 0 & 0 & \ddots \\ 0 & 0 & \dots \end{matrix}}^{m+1 \text{ columns}} & \overbrace{\begin{matrix} 0 & 0 & 0 & \dots & 0 \\ a_0 & 0 & 0 & \dots & 0 \\ \ddots & \dots & \vdots & \vdots & 0 \\ 0 & 0 & a_m & \dots & a_0 \\ b_0 & 0 & 0 & \dots & 0 \\ \dots & b_0 & 0 & \dots & 0 \\ \ddots & \dots & \vdots & \vdots & 0 \\ 0 & b_n & \dots & \dots & b_0 \end{matrix}}^{d-m \text{ columns}} \\ \underbrace{\qquad\qquad}_{d-n \text{ columns}} & \underbrace{\qquad\qquad\qquad\qquad\qquad}_{n+1 \text{ columns}} \end{pmatrix} \begin{pmatrix} x^d \\ x^{d-1} \\ \vdots \\ \vdots \\ \vdots \\ \vdots \\ x \\ 1 \end{pmatrix}.$$

is also confusing. It would be better to write

$$\delta_0(d)(A,B) \;=\; (r_{d-m},\dots,r_0,s_{d-n},\dots,s_0)\cdot \begin{pmatrix} \overbrace{\begin{matrix} a_m & a_{m-1} & \dots & a_1 & a_0 \\ 0 & a_m & a_{m-1} & \dots & a_1 \\ \vdots & \ddots & \ddots & \ddots & \ddots \\ 0 & \dots & 0 & a_m & a_{m-1} \\ b_n & b_{n-1} & \dots & b_1 & b_0 \\ 0 & b_n & b_{n-1} & \dots & b_1 \\ \vdots & \ddots & \ddots & \ddots & \ddots \\ 0 & \dots & 0 & b_n & b_{n-1} \end{matrix}}^{m+1\text{ columns}} \overbrace{\begin{matrix} 0 & \dots & 0 \\ a_0 & \ddots & \vdots \\ \ddots & \ddots & 0 \\ \dots & a_1 & a_0 \\ 0 & \dots & 0 \\ b_0 & \ddots & \vdots \\ \ddots & \ddots & 0 \\ b_1 & b_0 & \end{matrix}}^{d-m\text{ columns}} \\ \underbrace{\qquad\qquad}_{d-n\text{ columns}} \qquad\qquad \underbrace{\qquad\qquad\qquad\qquad}_{n+1\text{ columns}} \end{pmatrix} \begin{pmatrix} x^d \\ x^{d-1} \\ \vdots \\ \vdots \\ \vdots \\ \vdots \\ x \\ 1 \end{pmatrix}.$$

page 79, line 8 from bottom:
The displayed formula

$$\begin{pmatrix} a_{m-1} & \dots & a_0 & 0 & 0 & \dots & 0 \\ 0 & a_{m-1} & \dots & a_0 & 0 & \dots & 0 \\ 0 & \ddots & \ddots & \dots & \vdots & \vdots & 0 \\ 0 & \dots & 0 & 0 & a_{m-1} & \dots & a_0 \\ b_n & b_{n-1} & \dots & b_0 & 0 & \dots & 0 \\ 0 & \ddots & \ddots & \dots & \vdots & \vdots & 0 \\ 0 & \dots & 0 & b_n & b_{n-1} & \dots & b_0 \end{pmatrix}$$

should read

$$\begin{pmatrix} a_{m-1} & \dots & a_1 & a_0 & 0 & \dots & 0 \\ 0 & a_{m-1} & \dots & a_1 & a_0 & \ddots & \vdots \\ \vdots & \ddots & \ddots & \ddots & \ddots & \ddots & 0 \\ 0 & \dots & 0 & a_{m-1} & \dots & a_1 & a_0 \\ b_n & b_{n-1} & \dots & b_1 & b_0 & \ddots & \vdots \\ \ddots & \ddots & \ddots & \ddots & \ddots & \ddots & 0 \\ \dots & 0 & b_n & b_{n-1} & \dots & b_1 & b_0 \end{pmatrix}$$

page 114, line 11 from bottom, Exercise 7.17:
The expression

$$\pi : \mathbb{A}^n(k) \to \mathbb{A}^d(k)$$

should read

$$\pi : V \to \mathbb{A}^d(k)$$

page 117, lines 4-5 from bottom, Example 8.5:
'If $I = \langle xy, y^2 \rangle \ldots$' should read 'If $I = \langle xy, x^2 \rangle \ldots$'
The displayed equation

$$I = \langle y \rangle \cap \left\langle x^2, y \right\rangle$$

should read

$$I = \langle x \rangle \cap \left\langle x^2, y \right\rangle$$

page 152, line 6, Example 9.39:
The displayed matrix

$$\begin{pmatrix} z_{m\ 0} & z_{m-1\ 1} & \cdots & z_{1\ m-1} \\ z_{m-1\ 1} & z_{m-2\ 2} & \cdots & z_{0\ m} \end{pmatrix}.$$

is confusing and unattractive. It should be replaced by

$$\begin{pmatrix} z_m & z_{m-1} & \cdots & z_1 \\ z_{m-1} & z_{m-2} & \cdots & z_0 \end{pmatrix}.$$

page 192, lines 5-7, Example 11.19:
Add a period to the end of

$$\begin{aligned} (e_1 \wedge e_2 \ &+ \ e_3 \wedge e_4)^2 = e_1 \wedge e_2 \wedge e_1 \wedge e_2 \\ &+ e_1 \wedge e_2 \wedge e_3 \wedge e_4 + e_3 \wedge e_4 \wedge e_1 \wedge e_2 + e_3 \wedge e_4 \wedge e_3 \wedge e_4 \\ &= \ 2e_1 \wedge e_2 \wedge e_3 \wedge e_4 \end{aligned}$$

so it reads

$$\begin{aligned} (e_1 \wedge e_2 \ &+ \ e_3 \wedge e_4)^2 = e_1 \wedge e_2 \wedge e_1 \wedge e_2 \\ &+ e_1 \wedge e_2 \wedge e_3 \wedge e_4 + e_3 \wedge e_4 \wedge e_1 \wedge e_2 + e_3 \wedge e_4 \wedge e_3 \wedge e_4 \\ &= \ 2e_1 \wedge e_2 \wedge e_3 \wedge e_4. \end{aligned}$$

page 199, line 5, Example 11.31
Delete the comma immediately following the equation

$$\omega \wedge \omega = 0,$$

so it reads

$$\omega \wedge \omega = 0$$

page 242, line 10, (Theorem A.14 Sketch Proof)
Add a proof completion sign '□' at the end of the line, i.e., after 'content 1 in $R[x]$.'