Updated: Oct 13, 2012.

The typos marked OK are fixed already in the new paperback version.

Chapter 1

1.4.9 proof incorrect. Fix:

For $e = \langle e_0, e_1 \rangle$, let $q(e,n)= \Phi_{e_0}^{\emptyset'}(n)[s]$ if this converges with use $\le \Phi_{e_1,s}(n)$, and 0 otherwise.
OK

1.7.18 p.43, proof of (i) to (iii). A should be B, and $\le_m$ should be $\le_1$ (twice) OK

p.55, line 3. V_{e,s} should be \hat W_{e,s}

In 1.8.62 sollte in der ersten Formelzeile vermutlich X^{[0]} identisch zur leeren Menge sein (statt X^{[n]}) und diese Bedingung sollte vermutlich auch in der nächsten Zeile nochmals aufgegriffen werden, etwa dadurch, daß man "<k,0> nicht in X" fordert.

In 1.8.70 sollte man in der Formelzeile, die f charakterisiert eine Bedingung aufnehmen, die fordert, daß das Bild von f kompatibel ist in dem Sinne, daß alle Wörter f(0),...,f(n) eine gemeinsame Fortsetzung haben. Andernfalls könnte f(n) ja für jedes n ein ganz anderes (minimales) Wort x sein, das die Bedingung S(n,x) erfüllt.

Chapter 2

2.1.17 Needs hypothesis $d \ge 2$ OK

2.1.19(ii) was incorrect, but works for the intended application (to optimal machines). See new version. OK

Solution to 2.2.22: say that the function D is computably approximable from above OK

p96 In eqn (2.9) right hand side: …. \le 5 K^2 C(x) OK
p97 displayed equation on top, right hand side: … + 2K^2 C(x). OK

2.4.10 proof:minor change needed in argument to justify (2.11) OK

2.5.5 proof: Construction of W, second line: if C_s(x) \le n-2d, put the request … in unless it is already in W

Chapter 3

p129, subsection on Schnorr randomness
should be: Even THOUGH Schnorr randomness is a weaker notion, … OK

3.6.11 eqn (3.10) needs a <=, not a > OK

3.6.21 not relative to halting problem ??

Chapter 4

Chapter 5

- 5.1.3 proof: add

Let b be as above. OK

5.1.26 end: ``This needs that X is Delta_2'' OK

5.2.20(ii) end of proof: Greenberg has pointed out that some detail is missing here. One has to non-uniformly pick the largest $r\in O(b^2 2^b) such that i.o. there are r many b-compressible strings. Now search for levels where this number r is reached; this is a c.e. event.

5.3.6 THE CORRESPONDING ENUM OF the change set OK

p188, 5.3.9 2(-x) should be 2^{-x} OK

190 12 MANY results OK

5.3.37 Recall that a cost function OK

191 5 these oracles OK

R. Solovay has pointed out that we can't really have the procedures reach their exact goals. Sometimes they will overshoot. This is fixed in the new version (all procedures can overfulfill to at most twice their goals). This merely leads to some minor changes in constants OK

5.4.10 proof, end of page 214: $p \le 2^u \alpha$ OK

p 209 l -7: should be $\langle l\sigmal +u+1, y\rangle$ OK

219 -20 Cor 5.5.3 OK

229 - 4 OF the same measure OK

5.6.5. Proof of <==   first line: 2^r

5.6.22 full stop OK

Chapter 6

Chapter 7

Chapter 8

p352 20 with USE bounded by OK

p362 ADD

Barmpalias shows:
Halting problem c.e.traceable by Y implies that Y is not array computable.

This gives a further inclusion array computable --> not LR-complete.

Chapter 9

Exercise 9.2.10 is incorrect as pointed out by Bienvenu. Higher Omega is weakly 2-random and hence not even Turing above the halting problem.

Appendix

Index

428 Low for Omega repeated