Partial Differential Equations,
An Introduction to Theory and Applications
by
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Corrections to Text

page 27, problem 3: This problem is too hard (but can be done with maple or mathematica). Calculate $u_2(x)$ only.

page 41: problem 7 should be the initial value problem posed on the plane $(x, y) \in \mathbb{R}^2$.
A better version of the problem is:
7b. Use the method of characteristics to solve the initial value problem for $u = u(x, y, t)$ on the domain $-\infty < x, y < \infty,$ small $t > 0$:

$$\begin{aligned} u_t + y\, u_x + u u_y &= 0, \\ u(x, y, 0) &= x + y. \end{aligned}$$

Show that the solution has a singularity as $t \to t^*$ for some $t^* > 0$, and find the value of t^*.

Problem 10 should refer to a different example - example 5, chapter 2.

page 79, problem 2: Include "in $\mathbb{R}^n$"

page 117, problem 7.5: a '+' should be '='. Prove

$$(f * g)' = f' * g = f * g'.$$

page 118, problem 6(b): There should be a π in the argument of sin : $\sin \pi(x - n)$.

page 138: Delete sentence after Lemma 9.1.

page 150, problem 9: Hint should be $u = v/r$.

page 173, problem 3: Missing minus sign on u''. $L = -u'' + c(x)u$

page 219: line 5 from bottom: w should be ψ.