A small napkin
Globe and Mail, Facts and Arguments, Thurs. Feb 6. 1997.

Joanna burst into my office this morning and flopped down in the chair. She was wearing a racy black fedora, but her mouth was grim. *Exam return day!* and she spewed a pile of scripts upon my desk. "How was the math?" I had remembered her despair when she came home from that exam. *Oh just about what I figured—60 per cent.* I retrieved the exam, and it was as I too had figured—a collection of small technical routines. *I only had time to answer three quarters of the questions.* Pace and speed are for her problems, and we have talked about that in the past. "Don't forget," I reminded her, "That none of this is mathematics. This has nothing to do with your success in math. I know this because I am a mathematician, and these things are definitely not what I do." *I know, I know!* I tell her this again and again, but it's hard for her not to get discouraged when she gets poor marks. "Hey remember that *two ants** problem? You solved that one in your head!" *Yeah, we were on the 401 and we didn't have any paper.* "And my 303 class had a lot of trouble with it! *To be fair, Daddy, I had a Tim Horton napkin. Remember?* "Yeah, you're right—let's not exaggerate your abilities." *But it was one of their small napkins.*

"So, what else?" I asked, rummaging through the pile. *80 in English.* "Hey, not bad! Let's have a look." *It was a nice exam.* "Hmm. Interesting." *The main part is the essay question. Here.* "Ahh. What was the question?" She told me as near as she could recall:

> In each of the following three works, a serious character flaw exhibited by the main
> character contributes to chaos, unhappiness and even disaster in his or her own life
> or in the life of loved ones. Discuss this idea and compare its significance in **two** of
> these works: Othello, A Man for all Seasons, The Stone Angel.

Wow, that's some question. I read her essay—not at all bad for a one-hour effort, though I myself would have wanted a whole weekend.

What struck me with real force about the two exams was their difference in sophistication. There was nothing on the math exam to touch the sophistication of that English question—not even close! And sitting on my desk, photocopied from the front page of the morning Globe: *Young Canadians lack elite skills, science test finds.* Nothing the tiniest bit "elite" about that math exam at all.

And of course the math exam is the entirely legitimate child of an incestuous and unhappy union between the math curriculum and the current text books. Indeed, have you looked at a grade 12 math text book lately? You should—along with TV, it's part of your kid's life. You will be struck by how tedious it is. "Of course," you will protest, "I'm no judge since I could never do math." Well, I have news for you— one, you have every right to be a judge, and two, mathematicians find it just as tedious. No mathematician I know would read any part of the grade 12 text book for intellectual or spiritual pleasure. Pardon? Yes, you heard me correctly. *No mathematician I know would read any part of the Grade 12 text book for intellectual or spiritual pleasure.* I don't know how that statement strikes *you* but it strikes *me* as scandalous. And I as a professional mathematician have no choice but to shoulder the blame. Because ultimately it is I, the professional, who is charged to preserve and disseminate the heart and soul of my subject. And I have let the high schools down.

Not only is it tedious, it is unimportant. There was not a single important question on Joanna's math exam. So I ask myself—who was this exam designed to serve? What was it supposed to forge? (*What the hammer? What the chain? In what furnace was thy brain?*) There's some powerful sloppy thinking around that question these days. Whom do we have in mind here that we want to construct? Margaret Lawrence? Northrop Frye? Roberta Bondar? John Polanyi? Ursula Franklin? Bruce Kidd? Hilary Weston? Oscar Peterson? Karen Kain? Jean Chretien? Just how was that exam supposed to contribute to Canada's role as a leader in international anything? 'Cause I'll tell you something—not a single person on that list or on any other, is at all served by our present poverty-stricken curriculum in mathematics. Those who might become our scientific and technological leaders would be better served by the real thing,

something with some bite and zest and sophistication, and those who will lead us in other ways and who will never really need the technical balls and hoops, would be better served by the real thing too just as they are better served in the music and art curriculum by symphonies and paintings than by technical fragments of note and scale and line and colour. And finally the ones who wind up doing simple honest work trying to build rich fulfilling artistic lives won't need much math either (that's right—they won't—if you don't believe me go out in the street and ask them) and would be better served by the real thing too.

In that *Globe* article, OTF president Bill Martin expresses disappointment in Ontario's poor showing. "We have no curriculum and the minister is not willing to pay for it," he says. He is right but it's not money that's lacking, not as long as there are enough small napkins around. It's courage and imagination.

* The "Two Ants" problem comes from Martin Gardner. A rectangular room has dimensions 12×12×24. That is, the floor and ceiling and both the side walls are 12×24 and the two end walls are 12×12. In the room there are two ants, a male and a female. The male ant is on the floor at one of the corners.
Now the female has positioned herself to be as far as possible from the male. That is, she has located herself at a point so that the male will take the longest possible time to get to her, given that he has to crawl along the walls, floor or ceiling of the room and will (of course) choose his path so that he gets to the female in the shortest possible time. The question is: where is the female?

Well there's an obvious answer—the diametrically opposite corner. That's certainly the point which is farthest from the ant as the crow flies. But an ant is not a crow .

Peter Taylor.

Needed: smarts and small napkins

BY PETER TAYLOR

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"Yeah, we were on the 401 and we didn't have any paper."

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"To be fair, Daddy, I had a Tim Hortons napkin. Remember?"

"Yeah, you're right — let's not exaggerate your abilities."

"But it was one of their small napkins."

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"In each of the following three works, a serious character flaw exhibited by the main character contributes to chaos, unhappiness and even disaster in his or her own life or in the life of loved ones. Discuss this idea and compare its significance in two of these works:

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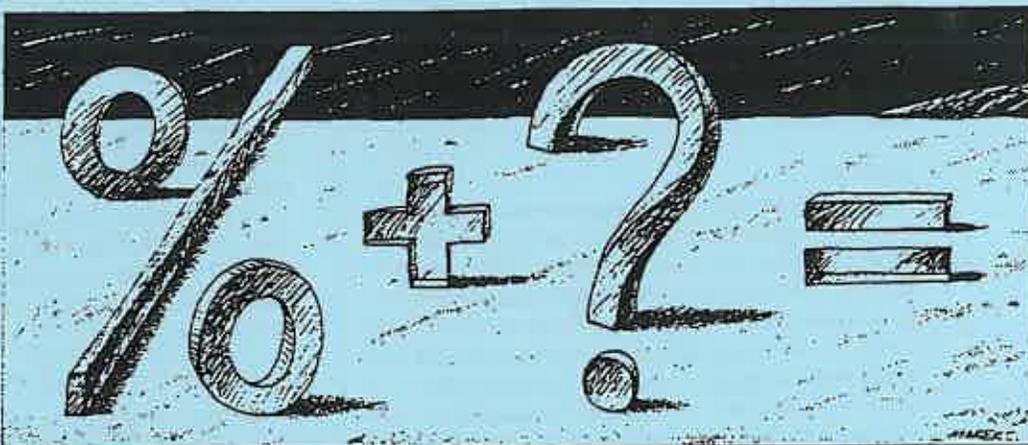
MAREK CIEZKIEWICZ

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Peter Taylor teaches mathematics, biology and education at Queen's University in Kingston.