

EDUC 253
FINAL EXAM, FALL2005

15% 1. For each of the following topics, suggest one appropriate teaching strategy.
Name the strategy and explain how you would apply it on the topic :

(a) prime factorization

(b) product of two signed numbers

15% 2. Write three questions you would ask at the beginning of an introductory lesson on solving a quadratic equation. Explain how these questions help in developing the topic as well as encouraging students to exercise higher-order thinking skills

10% 3. Describe and justify one motivational technique to be used in classroom teaching in an introductory lesson on signed numbers

10% 4. What is journal writing and how can it be used in teaching mathematics?
What are the advantages of journal writing in the teaching of mathematics?

15% 5. Given the following problem:
There are 10 towns and exactly one road has to be built between each two towns.
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Solve this problem **using three different problem-solving strategies.**

6. 10% (a) Describe how you would use Cabri to teach the exploration of the property that the bisectors of the angles of a triangle are concurrent.

15% (b) Suppose you want to teach the same property in (a) to Grade 9 students and assume that the students have access to a computer lab with Cabri. Describe the steps you would follow in teaching that property using Cabri

15% 7. Write three test items (one is procedural knowledge, one is conceptual understanding, one is problem solving) on the topic of quadratic equations. For each item specify what the item measures exactly.