LAURIER WILFRID LAURIER UNIVERSITY | Accessible Learning

Understanding & Recalling Math Concepts

1. Move Beyond Memorization

- Memorizing formulas isn't enough, math requires deep understanding and the ability to apply concepts in different contexts.
- Rote learning alone often fails; combine it with active, meaningful study to master complex ideas.

2. Use Retrieval Practice

- Actively test yourself to improve long-term memory and understanding.
- Activities: flashcards, practice problems, and quizzes without looking at notes.
- This "testing effect" is scientifically proven to be more effective than passive review

3. Apply Spaced Repetition & Spacing Effect

- Space out study sessions instead of cramming.
- Revisiting material after delays strengthens memory and enhances conceptual retention.
- Especially useful for math principles and formulas

4. Think Metacognitively

- Reflect on how you study and what works for you.
- Monitor your understanding and adapt strategies accordingly.
- Metacognition "thinking about your thinking" What's working, what isn't and what change can be applied to compensate.

5. Use Analogies & Concept Mapping

- **Analogies** link new ideas to known ones, making complex concepts more accessible.
- **Concept maps** visually show relationships, reinforcing understanding.

Suggested Study Routine

1. **Start with a quick quiz** on recent topics (retrieval practice).
2. **Review errors**, fill in gaps, and revisit challenging concepts.
3. **Repeat quizzes** after several days (spaced repetition).
4. **Reflect on what helped best** e.g., flashcards, practice problems, maps (metacognition).
5. **Explain concepts** aloud or in writing to reinforce understanding.

Why It Works

- Retrieval practice strengthens memory retrieval pathways; revisiting material over time solidifies retention.
- Active recall and spaced repetition help transfer knowledge to new problems.
- Reflecting on your own methods helps you refine effective strategies.

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STRATEGY	WHAT IT DOES
Retrieval Practice	Tests recall & strengthens memory
Spaced Repetition	Reinforces learning over time
Metacognition	Helps monitor and improve how you study
Analogies/Concept Maps	Builds meaningful connections and context

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