Exam I Topics include:

Limits

- Def's and meanings of one-sided limits, two-sided limits, infinite limits, limits at infinity;
- Evaluating all types of limits (many rules & techniques);
- Relation of limits to horizontal & vertical asymptotes;

Continuity

- Def's & meanings of continuity, left-continuity, right-continuity;
- Discontinuities: meaning & different types;
- Rules for knowing where a given function is continuous;
- Intermediate Value Theorem (statement, meaning & use);

Derivatives

- Def of the derivative; its meaning as a slope and as an instantaneous rate of change; its relation to average rates of change.
- Relationship between continuity and differentiability; ways a function can be non-differentiable at $x=a$.

- Finding derivatives using:
  - Basic rules (§ 2.3)
  - Product & Quotient rules (§ 2.4)
  - Chain rule (§ 2.5)

**Miscellanea**

- Finding the equation of a tangent line

Suggested Problems to review:

1.3/ 3, 5, 6, 9
1.4/ 11, 13, 15, 21, 23, 37, 43
1.5/ 3, 5, 6, 15, 17, 19, 20, 27, 29, 37, 38, 44a
1.6/ 1, 2, 5, 7, 13, 15, 17, 19, 20, 22, 23, 25, 26, 27, 29, 31
2.1/ 1ab, 7ab, 14, 15, 17, 23, 25, 27
2.2/ 1, 3, 5, 7, 9, 19, 21, 27, 29
2.3/ 1, 3, 6, 7, 11, 16, 19, 21, 22, 25, 29, 32, 41, 43
2.4/ 3, 4, 13, 15, 19, 23, 27, 45
2.5/ 7, 9, 10, 15, 21, 22, 29