

## **What to Know for the Final Exam**

17 written questions (55 marks)

### **POSSIBLE TOPICS**

- Limits – as  $x$  approaches a number and as  $x$  approaches  $\pm\infty$
- Continuity of a function (including from the left or right, removable and non-removable)
- Derivatives (product rule, quotient rule, chain rule, implicit, trig (no inverse trig), exponential and logarithmic)
- Find equation of a tangent line at a point.
- Local linear approximation
- Related rates
- Increasing/decreasing, concave up/down, inflection points.
- Relative maximum and minimum
- Absolute maximum and minimum
- Integration – definite and indefinite (including by substitution)
- Reiman Sums (left, right, midpoint)
- Position, velocity and acceleration problems.
- Displacement and total distance travelled
- Area between curves
- Volumes by revolution and cross section.
- Solving differential equations with an initial value.