

# Math 1B Discussion Section Problems

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You should work on the following problems in groups of 3 or 4. Try to get through as many as you can, but you aren't expected to finish everything. Instead, you should make sure everyone in your group knows **how** to solve all the problems, and not just the answers.

1. Complete the square:  $6t^2 - 18t + 13$ . Your answer should be in the form  $a(x + b)^2 + c$
2. Find  $\int \frac{1}{4x^2+8x+4} dx$  Hint: do NOT use a trig substitution
3. Find  $\int \frac{1}{\sqrt{9x^2+6x-15}} dx$
4. Evaluate  $\int_0^{2/3} x^3 \sqrt{4-9x^2}$
5. Find  $\int \frac{1}{\sqrt{t^2-6t+9}} dx$
6. What is the average value of  $f(x) = \sqrt{x^2 - 1}/x$  for  $1 \leq x \leq 7$