

**Note.** This is an open brain, open HHA, closed book, quiz. Please fill in the blanks. Show no work.

**Q4a:** Let

$$h(z) := \int_3^{z^3+z^2} \sin^2(t) dt.$$

Then  $h'(z) = \underline{\quad}$ .

**Q4b:** The sum  $\frac{1}{12} + \frac{1}{20} + \frac{1}{30} + \dots + \frac{1}{2000 \cdot 2001}$  i.e,

$$\sum_{j=3}^{2000} \frac{1}{j \cdot [j+1]},$$

can be written as  $p/q$  in canonical form, with

$p = \underline{\quad}$  and

$q = \underline{\quad}$ .

**Q4a:**   25pts

**Q4b:**   25pts

**Total:**   50pts

Print name  ..... Ord:

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