

- Total points: 10+10 quiz points.
- Show *complete work*—that is, all the steps needed to completely justify your answer.
- *Simplify* your answers as much as possible.
- If you need extra space, work on the back and make a note on the front.

(1) Write the definition of $\binom{-2}{n}$ and simplify as far as possible.

(2) A curve $y = f(x)$ has arc length function $s(x) = x + x^3$. Find the square of the slope of the curve, i.e., $f'(x)^2$. Where is the curve horizontal?