

Homework 3-Math 231 h

Due date Wednesday, September 14, Submission in pairs!, *-turn in.

(1) *Let $a > 0$. Show that

$$\frac{e^{-\frac{a^2}{2}}}{a^2 + 1} \leq \int_a^\infty \frac{e^{-\frac{x^2}{2}}}{x} dx \leq \frac{e^{-\frac{a^2}{2}}}{a^2} .$$

(Hint: differentiate $\frac{e^{-\frac{x^2}{2}}}{x}$ and compare.)

(2) p=539 11, 13, 15, 20*

(3) p=539 46*

(4) p=543 72, 106, 108*

(5) p=691 13, 14, 16*, 38** (for experts).