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| CHEM 3322: Physical Chemistry II | Jonathan Riezman |
| Meeting 4 Quick Problems | 1/29/21 |

1a) (-3, -108) and (3, 108)

b) (-3, -108) is a maximum while (3, 108) is a minimum.

2a) Let and therefore for x < 1. We note that . Integrating both sides gives . This satisfies the requirements for a Taylor series expanded about 0, so is the series representation of about *a* = 0.

b) Plugging in the above formula when gives .

c) 0.182321557

3) Let and . Now consider the operator so that we have

. Integrating by parts simply gives

, therefore the operator is Hermitian.