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| CHEM 3322: Physical Chemistry II | Jonathan Riezman |
| Meeting 3 Quick Problems | 1/27/21 |

1a) and

b)

2a) By Euler’s Formula we have and because in general the absolute value of a complex number is we have . The final trigonometric identity used is proved in problem 3.

b)

c)

d) converting to trigonometric form we have which equals then similarly so the original term is thus the complex conjugate is .

3) Given andwe have

as desired.

4) Given and its reciprocal we can see that which is as expected for a reciprocal relationship.

5) Given we can multiply both the numerator and denominator by the complex conjugate of the denominator to get

6) θ = 50.194428908° = 0.876058051 radians; r = 7.810249676

7) 0+2i