Questions: Introduction to complex numbers

Tom Coleman

Summary

A selection of questions for the study guide on introduction to complex numbers.

*Before attempting these questions, it is highly recommended that you read* [*Guide: Introduction to complex numbers*](../studyguides/introtocomplexnumbers.qmd)*.*

## Q1

Using complex numbers, find solutions to the following equations.

1.1. $ x^{2}=−1$

1.2. $ x^{2}+9=0$

1.3. $ y^{2}+160=16$

1.4. $ x^{2}−1=0$

## Q2

For each of the complex numbers below, give their real and imaginary parts. (In this question, $a,b$ are real numbers.)

2.1. $ z\_{1}=2+3i$.

2.2. $ z\_{2}=−23+32i$.

2.3. $ z\_{3}=3−3i$.

2.4. $ z\_{4}=3i$.

2.5. $ z\_{5}=−3−2i$.

2.6. $ z\_{6}=a+2bi$.

2.7. $ z\_{7}=2$.

2.8. $ z\_{8}=3/2+2i/3$.

2.9. $ z\_{9}=22−33i$.

2.10. $ z\_{10}=333+22i$.

2.11. $ z\_{11}=2i−2$.

2.12. $ z\_{12}=−3i−2$.

## Q3

Find the complex conjugate for every complex number in Q2.

## Q4

Draw $z\_{1},z\_{4},z\_{5},z\_{7}$ and their conjugates on the same Argand diagram, making sure to label both your axes and each complex number on the diagram. Can you spot a relationship between a complex number and its conjugate, with respect to the Argand diagram?

[After attempting the questions above, please click this link to find the answers.](../answers/as-introtocomplexnumbers.qmd)

## Version history and licensing

v1.0: initial version created 10/24 by tdhc.

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