Answers: Introduction to complex numbers

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Summary

Answers to questions relating to the guide on introduction to complex numbers.

*These are the answers to* [*Questions: Introduction to complex numbers*](../questions/qs-introtocomplexnumbers.qmd)*.*

**Please attempt the questions before reading these answers!**

## Q1

Using complex numbers, find solutions to the following equations.

1.1. Here, and are the two solutions.

1.2. Here, and are the two solutions.

1.3. Here, and are the two solutions.

1.4. Here, and are the two solutions. (Real numbers are complex numbers too!)

## Q2

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

2.1. The real part of is and the imaginary part of is .

2.2. The real part of is and the imaginary part of is .

2.3. The real part of is and the imaginary part of is .

2.4. The real part of is and the imaginary part of is .

2.5. The real part of is and the imaginary part of is .

2.6. The real part of is and the imaginary part of is .

2.7. The real part of is and the imaginary part of is .

2.8. The real part of is and the imaginary part of is .

2.9. The real part of is and the imaginary part of is .

2.10. The real part of is and the imaginary part of is .

2.11. The real part of is and the imaginary part of is .

2.12. The real part of is and the imaginary part of is .

## Q3

The complex conjugate of is .

The complex conjugate of is .

The complex conjugate of is .

The complex conjugate of is .

The complex conjugate of is .

The complex conjugate of is .

The complex conjugate of is .

The complex conjugate of is .

The complex conjugate of is .

The complex conjugate of is .

The complex conjugate of is .

The complex conjugate of is .

## Q4

See [Figure 1](#fig-1) for the Argand diagram. You can notice that the complex conjugates of the complex numbers can be obtained by reflecting the point in the real axis.

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| Figure 1: An Argand diagram with the seven complex numbers in Example 5. |

## Version history and licensing

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

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