## YEAR 13 CALCULUS MINI QUIZ 2020

## 91577 Apply the algebra of complex numbers

## in solving problems

***OPEN BOOK QUIZ***

**Highlight** the correct answer in the answer grid provided at the end of the question paper and submit for marking via email.

**Time: 60 minutes to do the questions and 5 minutes to submit.**

1. Given that and are roots of the equation find the product, of the four roots of the equation.
2. Given and . If , find
3. If one solution of the equation is , find the values of the real constants and and the other roots of the equation.
4. If and . Solve for given that
5. Given that find the values of constants and
6. Solve the following equation for giving your answer in terms of

=2.

1. Solve the equation Express the solution in the form.
2. If and , find in the form.
3. and are complex numbers, where and Find and express your answer in the rectangular form
4. Solve the following equation for in terms of
5. If and have a common factor of where and are real. Solve for
6. Given the two complex numbers and Find if .
7. If and are the three roots of the cubi find the value of:

1. Find the range or ranges, of values can take for to have two real distinct roots.
2. Find the values of the complex number *u* and *v* in the form given: and .

ANSWER BOOKLET

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| --- | --- | --- | --- | --- |
| QUESTION |  |  |  |  |
| 1 | A | B | C | D |
| 2 | A | B | C | D |
| 3 | A | B | C | D |
| 4 | A | B | C | D |
| 5 | A | B | C | D |
| 6 | A | B | C | D |
| 7 | A | B | C | D |
| 8 | A | B | C | D |
| 9 | A | B | C | D |
| 10 | A | B | C | D |
| 11 | A | B | C | D |
| 12 | A | B | C | D |
| 13 | A | B | C | D |
| 14 | A | B | C | D |
| 15 | A | B | C | D |