

# Centum Preparation 100 Days plan class 12 Maths

| Q. No. | DAY - 7                                                                                                                                                                                                                                                                                                     |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 26     | <p><b>Example 2.1</b></p> <p>Simplify the following</p> <p>(i) <math>i^7</math>                      (ii) <math>i^{1729}</math>                      (iii) <math>i^{-1924} + i^{2018}</math></p> <p>(iv) <math>\sum_{n=1}^{102} i^n</math>                      (v) <math>i i^2 i^3 \dots i^{40}</math></p> |
| 27     | <p><b>EXERCISE 2.1</b></p> <p>Simplify the following:</p> <p>4. <math>i^{59} + \frac{1}{i^{59}}</math>                      5. <math>i i^2 i^3 \dots i^{2000}</math>                      6. <math>\sum_{n=1}^{10} i^{n+50}</math></p>                                                                      |
| 28     | <p><b>Example 2.2</b></p> <p>Find the value of the real numbers <math>x</math> and <math>y</math>, if the complex number <math>(2+i)x + (1-i)y + 2i - 3</math> and <math>x + (-1+2i)y + 1 + i</math> are equal</p>                                                                                          |
| 29     | <p><b>EXERCISE 2.2</b></p> <p>1. Evaluate the following if <math>z = 5 - 2i</math> and <math>w = -1 + 3i</math></p> <p>(v) <math>z^2 + 2zw + w^2</math>                      (vi) <math>(z + w)^2</math>.</p>                                                                                               |

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| 30 | <p>2. Given the complex number <math>z = 2 + 3i</math>, represent the complex numbers in Argand diagram.</p> <p>(i) <math>z</math>, <math>iz</math>, and <math>z + iz</math>                      (ii) <math>z</math>, <math>-iz</math>, and <math>z - iz</math>.</p> |
| 31 | <p>3. Find the values of the real numbers <math>x</math> and <math>y</math>, if the complex numbers <math>(3 - i)x - (2 - i)y + 2i + 5</math> and <math>2x + (-1 + 2i)y + 3 + 2i</math> are equal.</p>                                                                |
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