

Math notes

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1 Algebra

1.1 Even and Odd

Definition of Even and Odd numbers

$$Even : 2i, i \in \mathbb{Z} \quad (1)$$

$$Odd : 2i + 1, i \in \mathbb{Z} \quad (2)$$

1.2 Laws of Indices

Definition of laws on indices

$$a^m \times a^n = a^{m+n} \quad (3)$$

$$\frac{a^m}{a^n} = a^{m-n} \quad (4)$$

$$(a^m)^n = a^{mn} \quad (5)$$

$$a^1 = a \quad (6)$$

$$a^{\frac{1}{m}} = \sqrt[m]{a} \quad (7)$$

$$a^{-m} = \frac{1}{a^m} \quad (8)$$

$$a^{\frac{m}{n}} = \sqrt[n]{a^m} = (\sqrt[n]{a})^m \quad (9)$$

$$a^0 = 1 \quad (10)$$

$$(11)$$

1.3 Laws of surds

Definition of laws of surds

$$\sqrt{ab} = \sqrt{a}\sqrt{b} \quad (12)$$

$$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}} \quad (13)$$

$$a = \sqrt{a}\sqrt{a} \quad (14)$$

$$(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b}) = a - b \quad (15)$$

$$(16)$$