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JC MATHEMATICS (H2) STUDY TIPS

**A SMART WAY TO ADJUST THE
ARGUMENT OF A COMPLEX
NUMBER BACK INTO THE
DEFAULT RANGE**

PREPARED BY
Mr Jackie Lee



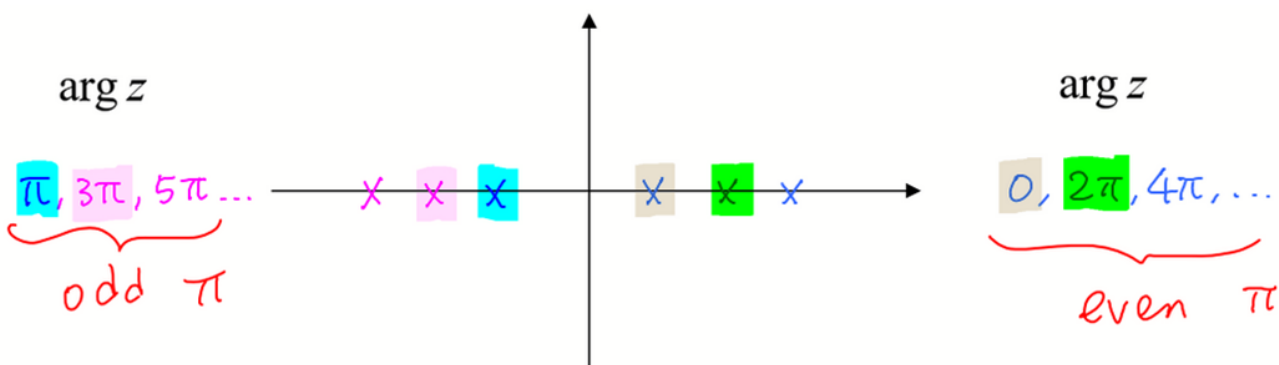
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JC_H2Maths_004



Appendix

• Adjusting Argument to Default Range

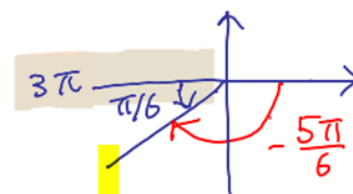


Example 16

Obtain the correct values of the following arguments.

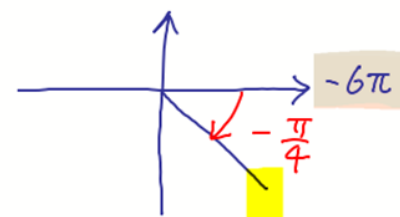
(a) $\arg z = \frac{19\pi}{6}$

$$= 3\frac{1}{6}\pi = 3\pi + \frac{\pi}{6} \equiv -\frac{5\pi}{6}$$



(b) $\arg z = -\frac{25\pi}{4}$

$$= -6\frac{1}{4}\pi = -6\pi - \frac{\pi}{4} \equiv -\frac{\pi}{4}$$

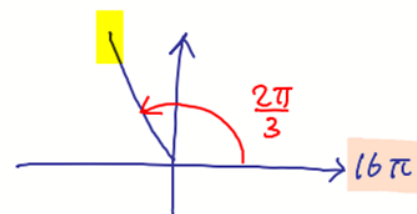


Quick Practice

Obtain the correct values of the following arguments.

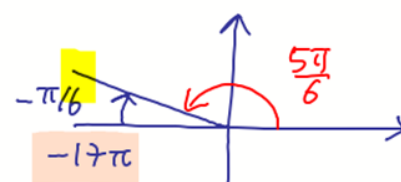
(a) $\arg z = \frac{50\pi}{3}$

$$= 16\frac{2}{3}\pi = 16\pi + \frac{2\pi}{3} \equiv \frac{2\pi}{3}$$



(b) $\arg z = -\frac{103\pi}{6}$

$$= -17\frac{1}{6}\pi = -17\pi - \frac{\pi}{6} \equiv \frac{5\pi}{6}$$





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Explanation

Here illustrates an easy-to-use shortcut method to adjust the argument of a complex number back into the default range. First, break it down into an odd or even multiple of π attached to an angle.

Remember, positive turns anti-clockwise and negative turns clockwise. For an odd multiple of π , it lands on the left side of the real axis, whereas an even multiple lands on the right side; it is then followed by the addition of the remaining angle.

Once the final location is determined, you are ready to derive the argument, which should now be within the default range from negative π to positive π , where positive π is inclusive.

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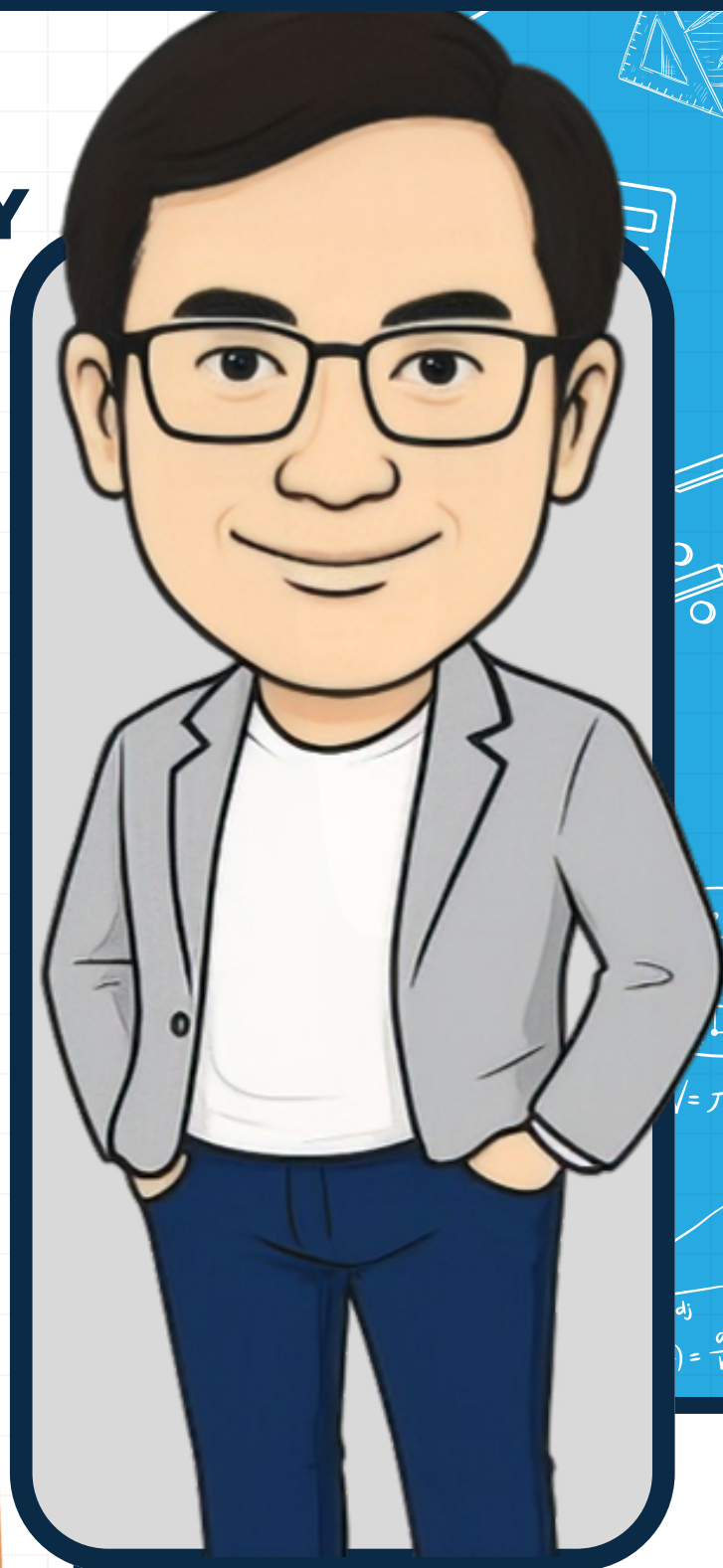
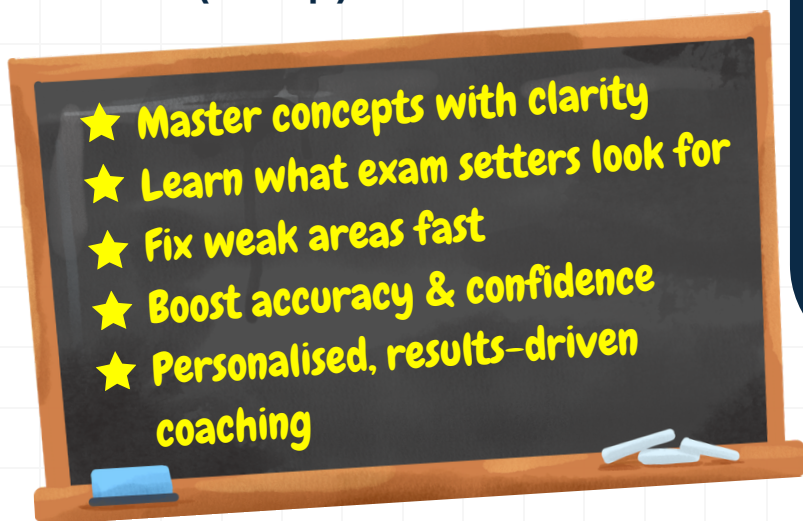
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- ✓ Winner of International Mathematics Competitions
- ✓ PGDE Qualification (NIE) with **Distinction in Mathematics**
- ✓ Former **School Maths Teacher** in
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