edX

MISISx 1.1x
Complex analysis

Course   Progress   Dates   Discussion   Wiki

🏠 Course / 3. Residue theory. Application to computation of complex integrals. Jordan's lemma. / Exercises

< Previous | 📝 | 📝 | 📝 | 📝 | 📝 | 📝 | 📝 | Next >

Problem 3.10

🔖 Bookmark this page

Problem 3.10

2 points possible (ungraded)

Evaluate the principal value of the following integrals.

$\text{PV} \int_0^\infty \frac{x^{a-1}}{1-x^b} dx$ for $b > a > 0$

$$\frac{\Box}{\Box} \cdot \Box \cdot \left(\frac{\pi \cdot \Box}{\Box} \right)$$

	a	b	π	2π	$\cot$	$\cos$	

$\text{PV} \int_0^\infty \frac{x\,dx}{(x^2+a^2)\sin bx}$ for $a > 0, b > 0$

$$\frac{\Box}{\Box \cdot \Box \cdot \left(\Box \right)}$$

	π	2	a	b	ab	sh	

Submit   You have used 0 of 6 attempts

< Previous | Next >