

CORRESPONDENCE

PHILOSOPHY AND MATHEMATICS.

To the Editor of BLACKFRIARS.

SIR,—Father Vincent McNabb in warning us last month to beware of the ‘cloaked absurdity of $\sqrt{-1}$ ’ appears to misunderstand the mathematician’s use of this expression.

When a mathematician writes, ‘Let $i = \sqrt{-1}$,’ he is making what he knows to be an impossible antecedent to a conditional proposition. He is saying equivalently, ‘If there were a square root of minus one,’ and he proceeds to write down a consequent following from this hypothesis.

Now St. Thomas (I Cont. Gent. cap. 13) in defence of his own and Aristotle’s use of a similar ‘cloaked absurdity,’ points out that there is no reason why the antecedent of a conditional statement should not be impossible, provided that the whole conditional statement be true, just as ‘this conditional is true, “if man is an ass, he is irrational.”’

If there were a square root of minus one, then $(\cos \theta + \sqrt{-1} \sin \theta)^n$ would certainly be equal to $\cos n\theta + \sqrt{-1} \sin n\theta$ for integral values of n . Here we have one true conditional proposition with its impossible antecedent.

It is evident that mistakes may be made in the use of any principle. As to the ‘fallacy of π ,’ a given point on the circumference of a wheel rolling along the ground without slipping *does* touch the ground two successive times at points whose distance may be measured rectilinearly.

I am, Sir,

Yours truly,

Q. MAURICE.