

FP1 Quiz 5

- 1) The series $1 - x + 2x^2 - 3x^3 + 4x^4 + \dots$ can be written using sigma notation as
- $\sum_{r=0}^{\infty} (-1)^r r x^r$
 - $1 + \sum_{r=0}^{\infty} (-1)^r r x^r$
 - $\sum_{r=1}^{\infty} r x^r$
 - $1 - \sum_{r=0}^{\infty} (-1)^r r x^r$
 - $\sum_{r=1}^{\infty} (-1)^{r+1} r x^r$
- 2) The two complex roots of the equation $2x^2 + 3x + 5 = 0$ are α, β . What does $\alpha + \beta$ equal?
- -1
 - $\frac{3}{2}$
 - 1
 - $\frac{5}{2}$
 - $\frac{-3}{2}$
- 3) Form the equation whose roots are $z_1 = 2 + i$ and $z_2 = 2 - i$
- $z^2 - 4z - 5$
 - $z^2 - 5z + 4$
 - $z^2 - 4z + 5$
 - $z^2 - 4z + 3$
 - $z^2 + 5z - 4$
- 4) The first three terms of the series $\sum_{r=0}^{\infty} (-1)^{r+1} 2^r x^{-r}$ are
- $-1 + \frac{2}{x} - \frac{4}{x^2}$
 - $1 + \frac{2}{x} - \frac{4}{x^2}$
 - $1 + 2x - 4x^2$
 - $\frac{2}{x} - \frac{4}{x^2} + \frac{8}{x^3}$
 - None of these.
- 5) Find the argument of $\frac{7-i}{3-4i}$
- $-\frac{\pi}{4}$
 - $\frac{\pi}{4}$
 - $-\tan^{-1}\left(\frac{31}{17}\right)$

d. $\tan^{-1}\left(\frac{31}{17}\right)$

e. $\frac{3\pi}{4}$

- 1) B
- 2) E
- 3) C
- 4) A
- 5) B