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6.1 Complex Numbers

Week 3 Quiz due Nov 16, 2015 at 15:30 UTC

6.2 Complex Exponentials

Week 3 Quiz due Nov 16, 2015 at 15:30 UTC

6.3 Aliasing

Consider two complex numbers $z_1 = 5 + j2$ and $z_2 = -2 + j$.

6.1 QUIZ QUESTION 1 (1/1 point)

What is the real part of the sum of $z_1 + z_2$?



Answer: 3

What is the imaginary part of the sum of $z_1 + z_2$?



Answer: 3

EXPLANATION

The real part of the sum is the sum of the real parts of z_1 and z_2 . Thus, the real part is $5 - 2 = 3$.

The imaginary part of the sum is the sum of the imaginary parts of z_1 and z_2 . Thus, the imaginary part is $2 + 1 = 3$.

You have used 1 of 3 submissions

6.1 QUIZ QUESTION 2 (1/1 point)

What is the magnitude of z_1 to two decimal place (e.g. 3.14)?



Answer: 5.3852

Week 3 Quiz due Nov
16, 2015 at 15:30 UTC

**6.4 Discrete
Fourier Transform**
Week 3 Quiz due Nov
16, 2015 at 15:30 UTC

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EXPLANATION

The magnitude is the square root of the sum of the squares of the real and imaginary parts. Thus,

$$\text{magnitude} = \sqrt{5^2 + 2^2} = \sqrt{29} \approx 5.3852$$

You have used 1 of 3 submissions

6.1 QUIZ QUESTION 3 (1/1 point)

What is the real part of the product of $z_1 \times z_2$?

✓ Answer: -12

What is the imaginary part of the product of $z_1 \times z_2$?

✓ Answer: 1

EXPLANATION

The real part of the product is $(5)(-2) - (2)(1) = -12$.

The imaginary part of the product is $(5)(1) + (2)(-2) = 1$.

You have used 1 of 3 submissions

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