



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

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COIMBATORE-641 035, TAMIL NADU



DEPARTMENT OF MATHEMATICS

UNIT III COMPLEX DIFFERENTIATION

Puzzle: Complex Cross numbers

Complex Numbers

Simplify the clues to complete the cross number puzzle. Write answers in the form $a + bi$. If either a or b equals zero, do not enter a "0" in the puzzle. Simply omit it. Write each term, sign (if negative), and operation (addition or subtraction) in a separate box.

Example: $2 + 3i$ is filled in as

2	+	3i
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, and $-2 - 3i$ is filled in as

-	2	-	3i
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1				2				7		13	14		
			3							15			
		4				8							16
	5					9							17
6					10								
			11							19	18		
									20				
	12					21							

ACROSS

1. $(-6 + 7i) + (14 - 6i)$

2. $(6 + 2i)(3 + 6i)$

3. $(4 + 3i)(5 + 5i)$

4. $(8 + 2i) - (6 - 2i)$

5. $\frac{9-3i}{1+i}$

6. $(14 + 5i) + (-7 + 7i)$

9. $(16 + 11i) - (12 + 12i)$

10. $5 - (-19 + 2i)$

11. $-5 + (4 + 3i)$

12. $(-3i)(7i)(-i)$

13. negative signed solution of $x^2 + 18x + 90 = 0$

15. $(4 - 2i)(6 - 5i)$

17. $-\sqrt{-16}$

19. $(6 + i)(-4 + 2i)$

20. $(16 + 4i) - (44 + 5i)$

21. $(1 + 2i)(1 + 3i)$

DOWN

1. positive signed solution of $x^2 - 16x + 100 = 0$

3. $(8 + 12i) - (3 + 6i)$

5. $10 - (7 - 5i)$

6. $\frac{29+3i}{1+2i}$

7. $(2 + 5i) - (12 + 4i)$

8. $(-7 + 3i) + (3 - 6i)$

10. $(5 + i)^2$

11. $-\sqrt{-1}$

13. $(-4 - 2i)(2 - 3i)$

14. $-3(-3 + 6i)$

16. $(i^2)(4i)$

17. $-2\left(\frac{3}{2} - \frac{1}{2}i\right)$

18. $-2(-13 + i)$

19. $(7i)(4i)$

20. $(2 - 2i) - (2 + 3i)$

Answer Key

1	8	+	i		2	6	+	42i		7	-		13	-	14	9	-	3i
	+			3	5	+	35i			10			15	14	-	32i		
	6i		4	2	+	4i		8	-		+		+	18i		16	-	
		5	3	-	6i			9	4	-	i		8i		17	-	4i	
6	7	+	12i			10	24	-	2i								3	
	-	5i		11	-	1	+	3i				19	-	18	26	+	8i	
	11i				i		10i				20	-	28	-	i			
		12	-	21i				21	-	5	+	5i			2i			