

Section 3.3 – Complex Numbers

Problem Set 3

Simplify the following expressions.

1. $-22i - 16 - 8 + 21i$

2. $(-7 - 4i)(24 + 19i)$

3. $(-25 + 15i) - (23 + 2i)$

4. $\frac{9 + 21i}{-25 - 16i}$

5. $\frac{18 + 22i}{9 - 18i}$

6. i^{67}

7. i^{37}

8. $(-21 - 23i) - (7 + 25i)$

9. $-18 + 19i - 9 - 8i$

10. $(13 - 11i)(2 - 17i)$

11. $(-13 - 16i)(23 - 12i)$

12. $(-4 + 22i) - (6 + 8i)$

13. $(-19 + 24i)(7 - 12i)$

14. $\frac{-5 + 22i}{-24 - 13i}$

15. $2i - 24i + 17 + 25$

16. $(-25 + 5i) - (-2 + 25i)$

17. $\frac{18 - i}{12 + 20i}$

18. $(7 - 2i)(9 - 21i)$

19. $\frac{-9 - 12i}{-3 + 3i}$

20. $21i - 16i - 8 + 6$

21. i^{121}

22. $\frac{-14 + 2i}{-7i}$

23. $-10i - 21 - 19i - 21$

24. $(-11 - 2i) - (23 + 21i)$

25. i^{128}

26. i^{94}

27. $(-24 - 13i)(7 + 12i)$

28. $(-3 - 1i)(24 + 24i)$

29. $(-25 - 9i)(21 + 9i)$

30. i^6

31. $24 + 7i + 1i + 5$

32. $-6i + 2 + 25i + 21$

33. $(-24 + 16i) - (24 + 17i)$

Solve the following equations for x .

34. $-3s^2 + 2s - 8 = 0$

35. $25s^2 - 13s + 21 = 0$

36. $22b^2 + 10b + 25 = 0$

37. $-18y^2 - 3y - 10 = 0$

38. $-8x^2 - 8x - 9 = 0$

39. $t^2 + 6t + 22 = 0$

40. $-14s^2 - 22s - 22 = 0$

41. $-12b^2 + 21b - 23 = b^2 - 4b - 3$

42. $-23b^2 + 19b - 26 = 2b^2 + b - 1$

43. $8a^2 - 17a + 19 = -2a^2$

44. $-14t^2 - 21 = -2t^2 + 2t - 2$

45. $20x^2 - 18x = -4x - 4$