5-1 Complex Numbers

Name: _____ Time› Start: _____ Finish: _____ Total Time = _____

Simplify all of these down to the lowest value you can.
Remember $i = \sqrt{-1} = i \quad i^2 = -1 \quad i^3 = -i \quad i^4 = 1$

_____ 1. i^{23} _____ 2. i^{44} _____ 3. i^{25}

_____ 4. i^{33} _____ 5. i^{14} _____ 6. i^{20}

_____ 7. i^{66} _____ 8. i^{73} _____ 9. i^{101}

Simplify

_____ 10. $\sqrt{-8}$ _____ 11. $\sqrt{-a^5}$

_____ 12. $-\sqrt{-9a^5b^2}$ _____ 13. $\sqrt{-10}$

_____ 14. $\sqrt{-2a^4}$ _____ 15. $-\sqrt{-8a^3b^6}$

_____ 16. -4i • 2i _____ 17. $(-2i)^3$

_____ 18. 3i (-4 + 3i) _____ 19. 2i (-4 – 5i)

_____ 20. $4 + \sqrt{-8} - (2 - \sqrt{-18})$ _____ 21. (2 – 5i) (3 + 4i)

_____ 22. (4 – 5i) (2 – 3i) _____ 23. (1 + 3i) (2 + 9i)