

Simplify the following expressions – simplify all imaginary numbers.

1. $\sqrt{52}$

2. $\sqrt{99}$

3. $\sqrt{392}$

4. $\sqrt{\frac{16}{36}}$

5. $\sqrt{\frac{27}{4}}$

6. $\sqrt{-121}$

7. $\sqrt{-32}$

8. $\sqrt{-45}$

9. $-\sqrt{-16}$

10. $i\sqrt{-225}$

11. i^5

12. i^{21}

13. i^{100}

14. i^{1003}

15. $-i^3$

Match the following complex numbers with the correct standard form.

16. $10 + \sqrt{-16}$

A. $4i$

17. $\sqrt{-16}$

B. $10 + 4i$

18. $10 - \sqrt{-16}$

C. $10 - 4i$

Write the expression as a complex number in standard form.

19. $(-3 + 3i) + (2 - i)$

20. $(8 + 2i) + (2 - 3i)$

21. $(1 - i) + (1 - i)$

22. $(-6 + 2i) + (2 - i)$

23. $(7 + 3i) - (1 + 7i)$

24. $6i(-3 - 7i)$

25. $(1 - 6i)(2 + 3i)$

26. $(2 + 4i)(2 - 6i)$

27. $(-4 - 10i)(6 - 5i)$

28. $(-5 + 2i)(-5 - 2i)$

29. $\frac{4}{5 - 2i}$

30. $\frac{2 - i}{3 + 4i}$