

Name \_\_\_\_\_

Algebra radicals and complex numbers quiz review

\* show all work \*no decimals permitted \*all answers in simplest radical form,  
including no radicals on denominator

Simplify

1. $\sqrt{45}$	2. $\sqrt{90}$	3. $\sqrt{98a^{10}b^5c^{16}d}$	4. $\sqrt{-500}$
5. $\sqrt{-18}$	6. $\sqrt{-121}$	7. $\sqrt{120ab^7c^{24}}$	8. $6\sqrt{80x^2}$

ADD/SUBTRACT

9. $10\sqrt{11} + 8\sqrt{11}$	10. $19\sqrt{2} - \sqrt{2}$	11. $\sqrt{200} + 5\sqrt{32}$	12. $4\sqrt{27} - \sqrt{48}$
13. $(3 + 9i) - (3 - 9i)$	14. $(2 + i) + (8 - 10i)$	15. $(3 - \sqrt{-225}) + (5 + \sqrt{-196})$	16. $(-9 + \sqrt{-1}) - (5 - \sqrt{-81})$

SIMPLIFY

17. $i^{37}$	18. $i^{80}$	19. $i^{99}$	20. $i^{78}$
--------------	--------------	--------------	--------------

MULTIPLY

21. $(3\sqrt{6})(5\sqrt{2})$	22. $\sqrt{8}(4 - \sqrt{3})$	23. $\sqrt{12}(3\sqrt{8})$	24. $\sqrt{6}(10 + \sqrt{8})$
25. $(10i)(4i)$	26. $(-5i)(2i)$	27. $(3i)(2i)(5i)$	28. $5i(i)$
29. $(3 + 5i)(3 - 5i)$	30. $(4 + 6i)(6 - 4i)$	31. $(3 - 4i)(8 - 2i)$	32. $(3 + 6i)(8 - i)$

DIVIDE/REDUCE.

33. $\sqrt{\frac{5}{9}}$	34. $\sqrt{\frac{17}{196}}$	35. $\sqrt{\frac{60}{49x^2}}$	36. $\sqrt{\frac{50x}{121}}$
37. $\sqrt{\frac{84x^3}{21x}}$	38. $\sqrt{\frac{5}{45}}$	39. $\sqrt{\frac{80x}{10}}$	40. $\frac{18}{\sqrt{2}}$
41. $\frac{5}{\sqrt{6}}$	42. $\frac{\sqrt{3}}{\sqrt{8x}}$	43. $\frac{\sqrt{7}}{\sqrt{18}}$	44. $\frac{4x}{\sqrt{20}}$

