

HOMEWORK: Exponents and Radicals

NAME: _____

Simplify.

1. $5a^3 \cdot 3a^{10}$	2. $(-5x)^2 \cdot 3x^{14}$
3. $\frac{2y^{-4}}{3x} \cdot \frac{6x^{-4}}{y^{-2}}$	4. $-12(abcdefghijklmnop)^0$
5. $40x^{-3}$	6. $\left(\frac{2}{5x}\right)^{-3}$
7. $x^{\frac{2}{7}} \cdot x^{\frac{4}{3}}$	8. $\frac{x^{\frac{2}{3}}}{x^5}$

Convert and evaluate.

9. $36^{\frac{3}{2}} =$	10. $100^{-\frac{1}{2}} =$
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Simplify.

11. $\sqrt{27}$	12. $(6\sqrt{5})(-3\sqrt{4})$
13. $\sqrt{20x^{10}y^{17}}$	14. $\frac{\sqrt{160}}{\sqrt{2}}$

15. $5\sqrt{28} + 3\sqrt{7}$	16. $(4 + \sqrt{2})(7 - 3\sqrt{5})$
17. $\frac{\sqrt{8}}{2\sqrt{5}}$	18. $\frac{1 - \sqrt{6}}{2 + \sqrt{6}}$

Simplify.

19. $4\sqrt{-27}$	20. $\sqrt{-4} - \sqrt{-100}$
21. $\sqrt{18x^{15}y^{21}}$	22. $(3 - i) - (-10 + 2i) + 8i$
23. $(5 + 3i)(2 - 8i)$	24. $(3 + 7i)(3 - 7i)$

Rationalize the denominator.

25. $\frac{3}{6 - 2i}$	26. $\frac{2i - 4}{5 + i}$
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