Day 04 Radicals & Rational Exponents Practice Name:_____ Block_____

1-8: Evaluate each of the following without using a calculator (use your power card).			
1. $243^{3/5}$	**2.** $(-1024)^{3/5}$	**3.** $(-512)^{2/3}$	**4.** $\left(\sqrt[4]{625}\right)^5$
5. $36^{3/2}$	**6.** $(-216)^{4/3}$	**7.** $(3125)^{2/5}$	**8.** $32^{2/5}$
9-16: Rewrite each expression using rational exponents.			
9. $\sqrt[3]{26}$	**10.** $\sqrt{36x^5y^6}$	**11.** $\sqrt[10]{x^6}$	**12.** $3\sqrt[4]{27n^{10}w}$
13. $\sqrt[4]{10^3}$	**14.** $\sqrt{3ab}$	**15.** $\left(\sqrt[3]{2w}\right)^5$	**16.** $\sqrt[4]{18x^9y^2}$
17-40: Simplify each expression. Put irrational answers in simplest radical form.			
17. $2^{\frac{5}{7}}a^{\frac{3}{7}}y^{\frac{9}{7}}$	**18.** $a^{\frac{2}{3}}g^{\frac{1}{4}}e^{\frac{1}{2}}$ $(4^{2/3})^6$	**19.** $m^{\frac{1}{3}}v^{\frac{3}{4}}z^{\frac{5}{6}}$	**20.** $\frac{y^{2/3}}{y^{1/3}}$
21. $z^{2/3} \bullet z^{1/2}$	**22.** $\sqrt[3]{16} \bullet \sqrt[3]{4}$	**23.** $\frac{\sqrt[4]{32}}{\sqrt[4]{2}}$	**24.** $\frac{\sqrt[3]{250}}{\sqrt[3]{2}}$

25. $\sqrt[4]{\frac{2}{9}}$	**26.** $\sqrt[4]{256x^8y}$	**27.** $\sqrt{\frac{4x^2y}{9z^2}}$	**28.** $\sqrt[5]{96} - 4\sqrt[5]{3}$
29. $2\sqrt[5]{3} - \sqrt[5]{3}$	**30.** $7(2^{1/8}) + 4(2^{1/8})$	**31.** $\sqrt[3]{40} + \sqrt[3]{5}$	**32.** $\frac{1}{64^{-\frac{1}{3}}}$
33. $4\sqrt{2} - \sqrt{8}$	**34.** $\left(\frac{3^{1/2}}{12^{1/2}}\right)^3$	**35.** $\left(28^{\frac{3}{5}}\right)^{\frac{5}{6}}$	**36.** $\frac{\sqrt[3]{24^4}}{24}$
37. $\sqrt[4]{a^2b^{14}}$	**38.** $\sqrt[3]{-72a^9b^2}$	**39.** $\sqrt[3]{-6x^5} \cdot \sqrt[3]{18x^4}$	**40.** $3\sqrt[4]{8} \cdot 7\sqrt[4]{32}$