	Date:
Simplifying Radicals	**1.** $3\sqrt{507}$ **2.** $-2\sqrt[4]{176}$
	3. $\sqrt[3]{\dfrac{54}{128}}$ **4.** $-3\sqrt{126a^9 b^3}$
	5. $\sqrt[3]{-448x^{17} y^4}$ **6.** $\sqrt[4]{625m^{21} n^5}$

	Date:
Add, Subtract, & Multiply Radicals	**1.** $2\sqrt[4]{768} - 3\sqrt{20} + 7\sqrt[4]{3}$ **2.** $2b\sqrt{147a^5} - 3a^2\sqrt{12ab^2}$
	3. $3\sqrt[3]{4p^5} \cdot -2\sqrt[3]{14p^6}$ **4.** $\sqrt{8}\left(\sqrt{2} - 5\sqrt{3}\right)$
	5. $\left(6 - 4\sqrt{5}\right)\left(1 + \sqrt{5}\right)$ **6.** $\left(2\sqrt{3} - 8\right)^2$

	Date:
Dividing Radicals	**1.** $\dfrac{24\sqrt[4]{240}}{3\sqrt[4]{5}}$ **2.** $\dfrac{\sqrt[3]{486m^{12}}}{\sqrt[3]{3m}}$
	3. $\sqrt{\dfrac{28x}{3}}$ **4.** $\dfrac{3-\sqrt{3}}{\sqrt{12}}$
	5. $\dfrac{4}{2-2\sqrt{2}}$ **6.** $\dfrac{2-3\sqrt{5}}{5-4\sqrt{5}}$

	Date:
Rational Exponents	**Write in radical form. Simplify if possible.** **1.** $(9x)^{\frac{1}{2}}$ **2.** $y^{\frac{7}{4}}$ **3.** $m^{\frac{10}{3}}n^{\frac{4}{3}}$ **Write in exponential form:** **4.** $\sqrt[4]{3k}$ **5.** $\sqrt[3]{p^{11}}$ **6.** $\sqrt[4]{a^5b^8}$ **Simplify:** **7.** $y^{\frac{7}{8}}\cdot y^{\frac{3}{8}}$ **8.** $\dfrac{(2m)^{\frac{11}{6}}}{(2m)^{\frac{1}{2}}}$ **9.** $\left(4^{-\frac{3}{4}}\right)^2$

|	**Date:**
Radical Equations	**Solve each equation. Check for extraneous solutions.**
	1. $\sqrt[3]{4m+28} - 1 = 3$　　　　　**2.** $(2-x)^{\frac{1}{2}} = (-4-2x)^{\frac{1}{2}}$
	3. $\sqrt{54-3k} = k$　　　　　　**4.** $-1 = \sqrt{5a-9} - a$
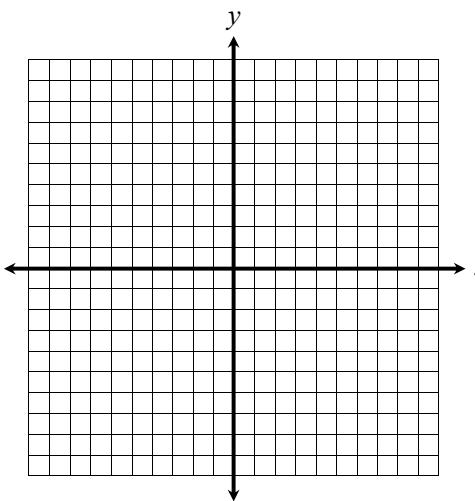
	Date:
Graphing Radical Functions	**1**. The cube root parent function is reflected across the x-axis, then translated 9 units right and 2 units down. Write an equation to represent this function. Give the coordinates of the turning point.
	2. Graph the function below and identify the key characteristics.

$f(x) = 2\sqrt{x+7} - 1$

Domain: _____

Range: _____

End Behavior:

As $x \to \infty,\ f(x) \to$ _____

As $x \to -\infty,\ f(x) \to$ _____

Endpoint: _____

Inc. Interval: _____

Dec. Interval: _____
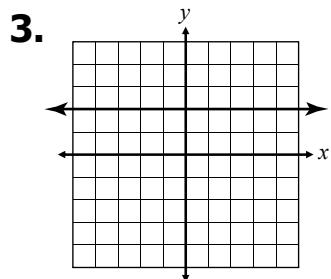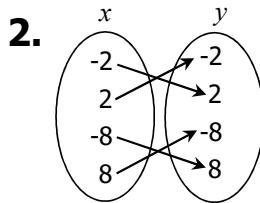
	Date:
Inverse Relations & Functions	**Which relations represent one-to-one functions?**

1.

x	y
-9	4
-5	-7
-1	1
0	4

2.

x $\qquad$ y

-2 → -2
2 → 2
-8 → -8
8 → 8

3.
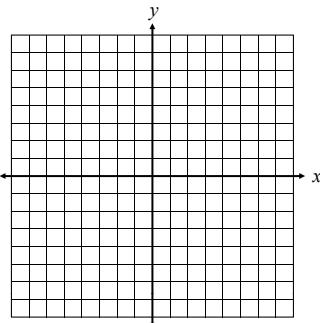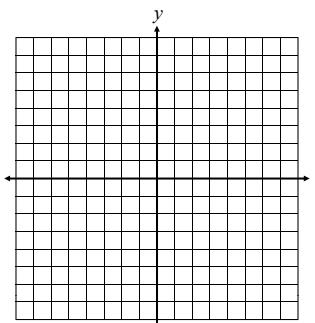
Write the inverse of each function. Graph to verify.

4. $f(x) = -\dfrac{4}{3}x$

5. $f(x) = 3x + 6$

	Date:
Verifying Inverses	**Determine whether the pair of equations are inverse functions.**

1. $f(x) = \dfrac{-2x - 8}{3}$ and $g(x) = -4 - \dfrac{3}{2}x$

2. $f(x) = -x - 1$ and $g(x) = 5x + 5$

3. $f(x) = \sqrt{x} + 3$ and $g(x) = x^2 - 6x + 9$