# Standard 3 Review: Name: _____

1. Rewrite the following Radicals with Rational Exponents.

   a. $\sqrt[4]{x}$

   b. $\sqrt[3]{(3x-2)^5}$

2. Rewrite the following in Radical Notation.

   a. $x^{\frac{1}{2}}$

   b. $(4-5x)^{\frac{2}{7}}$

3. Simplify.

   a. $\sqrt{324}$

   b. $\sqrt[3]{-64}$

   c. $\sqrt{8}$

   d. $(-32)^{\frac{1}{5}}$

   e. $27^{\frac{4}{3}}$

   f. $-125^{-\frac{2}{3}}$

4. Simplify.

   a. $3\sqrt{7}-2\sqrt{7}$

   b. $\sqrt[3]{2}-\sqrt[4]{3}$

   c. $\sqrt{3}\bullet\sqrt{27}$

   d. $\dfrac{\sqrt{18}}{\sqrt{2}}$

   e. $3\sqrt{50}+5\sqrt{32}$

   f. $\sqrt{\dfrac{16}{49}}$

5. Rationalize the denominators.

   a. $\dfrac{2}{\sqrt{6}}$

   b. $\dfrac{4}{2\sqrt{10}}$

   c. $\dfrac{8}{4+\sqrt{2}}$

   d. $\dfrac{11}{6-\sqrt{3}}$

   e. $\dfrac{6}{3-2\sqrt{2}}$

   f. $\dfrac{2}{4^{\frac{1}{3}}}$

6. Solve the Radical Equations. Check for Extraneous Solutions.

a. $\sqrt{x+10}-3=2$

b. $\sqrt{4x+1}+5=14$

c. $\sqrt[3]{3x-3}+4=7$

d. $\sqrt[4]{2x+6}-1=1$

e. $5x^{\frac{4}{3}}-11=394$

f. $(x^2+4x-13)^{\frac{2}{3}}=4$

c. $\sqrt{x}+\sqrt{x-5}=1$

d. $\sqrt{2x+6}-\sqrt{x+4}=1$

7. Find the Radical Domains.

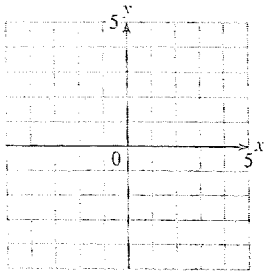
a. $f(x)=\sqrt{2x-6}$

b. $f(x)=\sqrt{15+2x-x^2}$

**8.** Graph the Radicals by plotting points. Include at least 3 points.

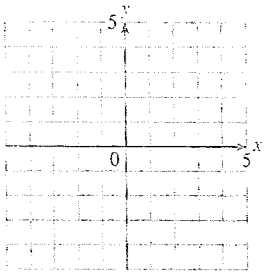
**a.** $y=\sqrt{2x-6}$

| x | y |
|---|---|



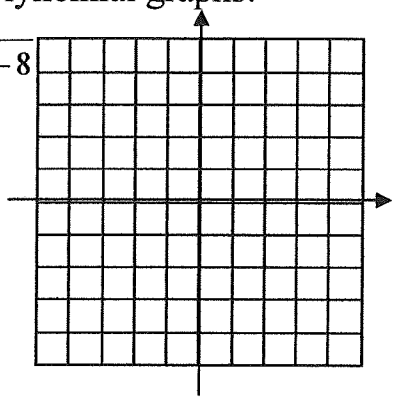

**b.** $y=\sqrt{15-3x}$

| x | y |
|---|---|

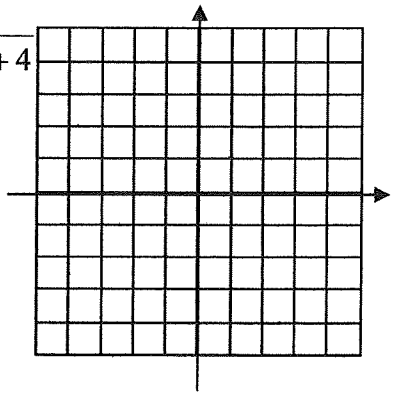



**9.** Find the Domains and sketch the graphs of the following Radical Equations. Visibly visualize the polynomial graphs!

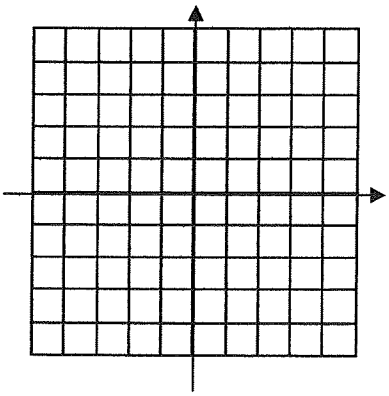
**a.** $f(x)=\sqrt{x^2-2x-8}$



**b.** $f(x)=\sqrt[3]{-x^2+3x+4}$



**c.** $f(x)=\sqrt{-x^3+x^2+6x}$



**d.** $f(x)=\sqrt{x^4-29x^2+100}$