

**Math 3: Review for Chapter 4 Test**

Name\_\_\_\_\_

1. Find the exact value of  $8^{\frac{2}{3}}$

2. Solve: a.  $5(x - 3)^3 = 135$  b.  $x^4 + 15 = 100$

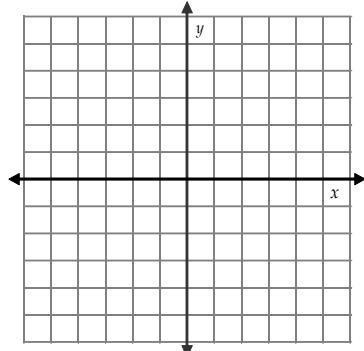
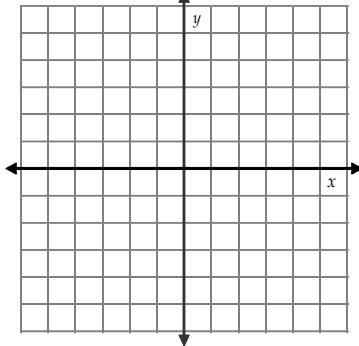
3. Simplify: a.  $(2^{\frac{2}{3}} \cdot 2^{\frac{5}{3}})^3$  b.  $\sqrt[5]{1215x^7y^{10}z^9}$

4. Simplify: a.  $\sqrt[3]{10} + \sqrt[3]{80}$  b.  $\sqrt{10} \cdot 3\sqrt{50}$

5. Simplify: a.  $\sqrt{\frac{2}{5}}$  b.  $\sqrt[3]{\frac{64}{5}}$  c.  $\frac{2}{1+\sqrt{5}}$

6. Graph. Find the domain and range. a.  $f(x) = \sqrt{x-2} - 1$  b.  $g(x) = \frac{1}{3}\sqrt[3]{x+2} + 3$

Describe the transformation  
from the parent function



7. Solve: a.  $\sqrt{x+3} = 4$  b.  $\sqrt{2x-3} = \sqrt{x+2}$

8. Solve the inequality:  $2\sqrt{x-2} + 1 \leq 9$

9. Solve the system:  $y = \sqrt{x+3}$

$$y = x - 9$$

10. For  $f(x) = 10x^{\frac{2}{3}}$  and  $g(x) = 5x^{\frac{1}{3}}$ , find  $fg(x)$  and  $\frac{f}{g}(x)$ . Domain? Evaluate at  $x=8$ .

11. Graph the function,  $f(x) = \frac{1}{3}x + 1$ , and its inverse.

