Algebra 2: Assignment #: _____ Name_____

Final Review: Chapter 7

Date_____ Period____

Write each expression in radical form.

1) $(10k)^{-\frac{4}{3}}$

2) $(10m)^{\frac{7}{4}}$

3) $(5x)^{\frac{3}{2}}$

4) $(3m)^{-\frac{3}{2}}$

Write each expression in exponential form.

5) $\sqrt[3]{10b}$

6) $\frac{1}{(\sqrt{5v})^5}$

7) $\sqrt[3]{7x}$

8) $\sqrt[3]{4n}$

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

9) $3x^{-1} \cdot 2x^{\frac{3}{2}} y^{\frac{5}{4}}$

10) $3yx^{-\frac{1}{2}} \cdot 3y$

11) $3x^{\frac{1}{4}} y^2 \cdot 4y^{-2} \cdot 2x^{\frac{3}{2}}$

12) $x^{\frac{3}{4}} \cdot 2yx^0$

13) $u^{\frac{4}{3}} v^{-2} \cdot (v^0)^{\frac{2}{3}}$

14) $\left(x^{\frac{3}{4}} y^{-\frac{3}{4}}\right)^{-1} \cdot x^2 y^{-\frac{1}{2}}$

15) $\frac{yx^{\frac{1}{2}}}{\left(xy^{\frac{3}{2}} \cdot x^2 y^{-\frac{1}{2}}\right)^{\frac{2}{3}}}$

16) $\frac{v^{\frac{1}{2}} \cdot u^2 v^{-\frac{1}{4}}}{\left(u^{-\frac{3}{2}} v^{\frac{1}{2}}\right)^0}$

State if the given functions are inverses.

17) $g(n) = \frac{1}{n-2} - 2$

$f(n) = \frac{1}{n+2} + 2$

18) $g(x) = -\frac{2}{x-1} + 2$

$f(x) = -\frac{3}{x-1} - 3$

19) $f(x) = -x$

$g(x) = x + 4$

20) $f(n) = -n - 1$

$g(n) = -n - 1$

Find the inverse of each function.

21) $f(x) = \dfrac{2x - 1}{3}$

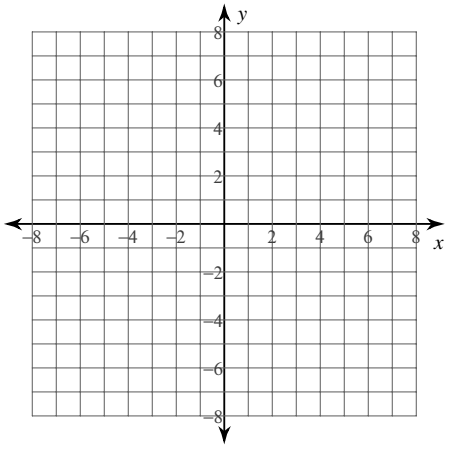
22) $f(x) = 3 + 2x^3$

23) $f(x) = \sqrt[3]{\dfrac{-x - 2}{2}}$

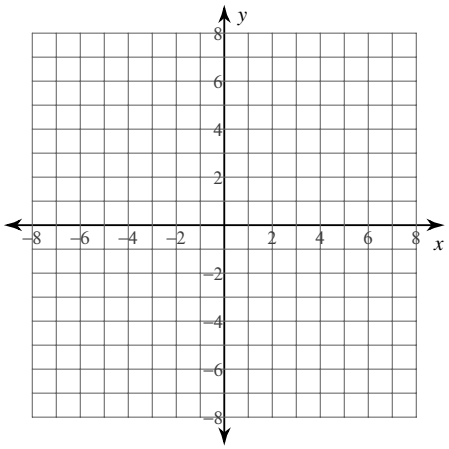
24) $f(x) = -\dfrac{\sqrt[3]{4x}}{2}$

Identify the domain and range of each. Then sketch the graph.

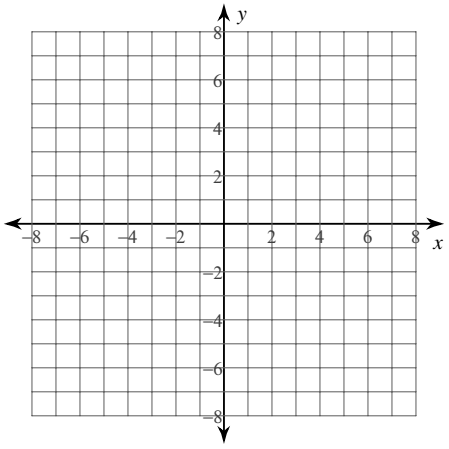
25) $y = \sqrt[3]{x}$



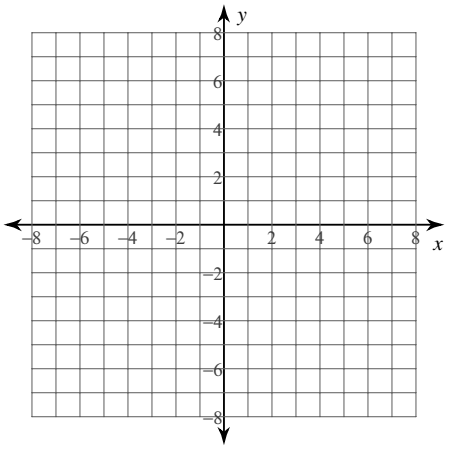
26) $y = \sqrt[3]{x + 6}$



27) $y = \sqrt[3]{x} - 4$



28) $y = \sqrt[3]{x - 4} + 3$



Solve each equation. Remember to check for extraneous solutions.

29) $\sqrt{15 - 2r} = \sqrt{2r + 3}$

30) $-9\sqrt{3x - 2} = -9$

Simplify.

31) $-3\sqrt{45} - \sqrt{8} - 3\sqrt{5}$

32) $2\sqrt{18} + 2\sqrt{3} - 2\sqrt{3}$

33) $\dfrac{\sqrt[5]{6}}{4\sqrt[5]{48}}$

34) $\dfrac{5}{5\sqrt[3]{-25}}$

35) $\dfrac{5 - 3\sqrt[3]{5}}{5\sqrt[3]{125}}$

36) $\dfrac{4 - 3\sqrt[3]{5}}{4\sqrt[3]{125}}$

Solve each equation.

37) $5\left(\dfrac{x}{5}\right)^{\frac{4}{3}} = 80$

38) $-3n^{\frac{5}{4}} = -729$