Algebra 2 Review for Sections 7-1 to 7-5, 7-8 Spring 2014

1. Simplify. Use absolute value symbols as needed.

a) $\sqrt[4]{a^6b^{13}c^{19}}$ b) $\sqrt[3]{-8m^{14}n^{21}}$

2. Simplify each. Assume that all variables are positive numbers.

a) $5\sqrt{180} + 3\sqrt{96} - 2\sqrt{20} + \sqrt{54}$ b) $\sqrt{6e^4g^3} \cdot \sqrt{12eg^9}$ c) $\dfrac{\sqrt[3]{250c^7r^{10}}}{\sqrt[3]{2c^2r}}$

d) $(3-2\sqrt{6})(4+\sqrt{6})$ e) $(5+\sqrt{11})(5-\sqrt{11})$

3. Rationalize each denominator and simplify. Assume all variables are positive numbers.

a) $\dfrac{2}{\sqrt{6x^7}}$ b) $\dfrac{11a^5}{\sqrt[3]{7a^8b^4}}$ c) $\dfrac{8}{\sqrt[5]{k^3mn^7}}$ d) $\dfrac{4}{7+\sqrt{10}}$

4. Rewrite in radical form. a) $7a^{\frac{2}{5}}$ b) $(8b)^{\frac{1}{3}}$

5. Rewrite in exponential form. a) $\sqrt[7]{h^4}$ b) $\sqrt{5c}$

6. Simplify each. Assume that all variables are positive numbers.

a) $(7k^{\frac{5}{6}})^3$ b) $(4r^6)^{\frac{3}{2}}$

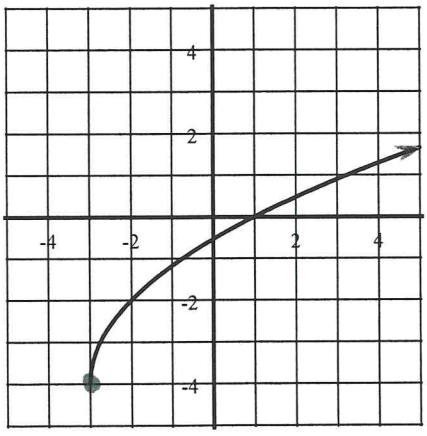
7. Solve each radical equation. Check for extraneous solutions.

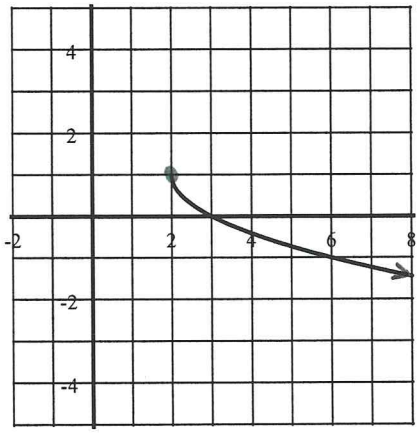
a) $\sqrt[3]{2x-7} = \sqrt[3]{x+4}$ b) $5\sqrt{x-7} - 4 = 6$ c) $3(x+1)^{\frac{3}{5}} = 24$

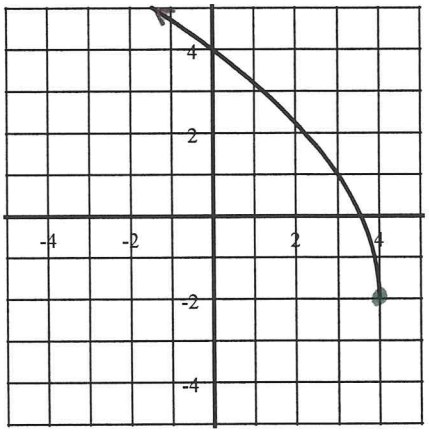
d) $\sqrt{3x-2} - x = 0$ e) $\sqrt{2x+19} - 2 = x$ f) $\sqrt[3]{x-5} + 7 = 3$

8. Write the equation of each square root function shown in the graphs.

a) b) c)







9. For each function do the following:

•Graph each function using at least 3 points.

•State the domain and range.

a) $y = -3\sqrt{x+5} + 5$ b) $y = 4\sqrt{x-1} - 3$ c) $-\sqrt{-(x-4)} + 2$

Alg 2 Review 7-1 to 7-5, 7-8 **Answers** Spring 2014

1. a) $|a||b^3|c^4\sqrt[4]{a^2bc^3}$ b) $-2m^4n^7\sqrt[3]{m^2}$

2. a) $26\sqrt{5}+15\sqrt{6}$ b) $6|e^2|g^6\sqrt{2e}$ c) $5cr^3\sqrt[3]{c^2}$ d) $-5\sqrt{6}$ e) 14

3. a) $\dfrac{\sqrt{6x}}{3x^4}$ b) $\dfrac{11a^2\sqrt{49ab^2}}{7b^2}$ c) $\dfrac{8\sqrt[3]{k^2m^4n^3}}{kmn^2}$ d) $\dfrac{28-4\sqrt{10}}{39}$

4. a) $7\sqrt[5]{a^2}$ or $7(\sqrt[5]{a})^2$ b) $\sqrt[3]{8b}$ 5. a) $h^{\frac{4}{7}}$ b) $(5c)^{\frac{1}{2}}$

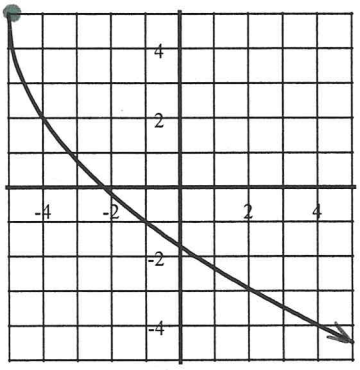
6. a) $343k^{\frac{5}{2}}$ b) $8r^9$

7. a) $x=11$ b) $x=11$ c) $x=31$

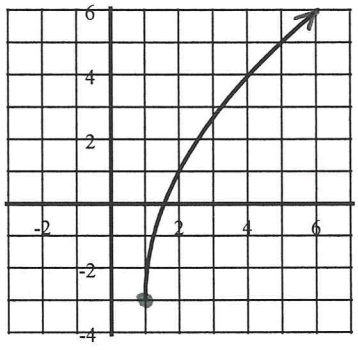
d) $x=1,2$ e) $x=3$ f) $x=-59$

8. a) $y=2\sqrt{x+3}-4$ b) $y=-\sqrt{x-2}+1$ c) $y=3\sqrt{-(x-4)}-2$

9. a) Domain: $x\geq -5$
Range: $y\leq 5$



b) Domain: $x\geq 1$
Range: $y\geq -3$



c) Domain: $x\leq 4$
Range: $y\leq 2$