Alg 2B Final Exam Review Fall 2017 Chapter 7

Show your **work** and answers on separate paper....NEATLY

1. Simplify each. Use absolute value symbols when necessary. a) $\sqrt[4]{162c^6d^8e^{13}}$ b) $\sqrt[5]{m^{12}p^{15}r^{22}}$

For 2 and 3, assume all variables are positive.

2. Simplify each. a) $\sqrt{15E^3F} \cdot \sqrt{3E^7F^8}$ b) $\dfrac{\sqrt{48a^9b^2}}{\sqrt{2ab^7}}$

3. Rationalize the denominator. a) $\dfrac{5}{\sqrt[3]{7c^{13}d^8}}$ b) $\dfrac{12k^2}{\sqrt[4]{9j^5k^2}}$ c) $\dfrac{8}{5+\sqrt{3}}$

4. Write in radical form. a) $E^{\frac{1}{4}}$ b) $Q^{\frac{2}{3}}$ 5. Write in exponential form. a) $\sqrt[7]{5a^3}$ b) $12\sqrt{w^9}$

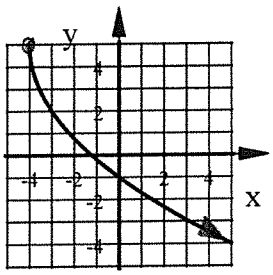
6. Solve each. a) $2\sqrt{3x+40} + 5x = 7x$ b) $\sqrt{x+11} + 1 = x$

c) $3(2x-5)^{\frac{3}{2}} + 37 = 61$ d) $4 \cdot \sqrt[3]{2x-3} + 1 = 21$

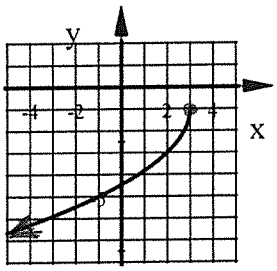
7. Simplify. $4\sqrt{50} + 3\sqrt{72} - \sqrt{45}$ 8. Simplify a) $(4+\sqrt{3})(5-2\sqrt{3})$ b) $(7-2\sqrt{5})(7+2\sqrt{5})$

9. Write the equation of each square root function:

a)



b)

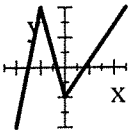


10. Write the equation of the inverse relation for each function.

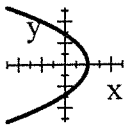
a) $f(x) = \dfrac{2x^3-3}{5}$ b) $y = -4x - 7$ c) $y = 4 \cdot \sqrt{5x+8} - 9$ d) $y = 10\left(\dfrac{x+8}{7}\right)^5$

11. Tell if the inverse relation of each graph is a function or not.

a)



b)



12. Graph each using at least three points.

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

13. State the Domain and Range for each.

a) $y = -8\sqrt{x+7} - 13$ b) $y = -5\sqrt{-(x-6)} + 7$

14. The graph of $f(x)$ is shown below. State the Domain and Range of the Inverse relation f^{-1}.