HAT

11/7/17

Chapter 6 Board Review

$$\sqrt[3]{\dfrac{5}{4}}$$

$$\dfrac{3}{\sqrt[3]{2x^2}}$$

$$\sqrt[4]{243a^{15}}$$

$$\sqrt[4]{162x^{16}y^9z^{12}}$$

Label each of the following statements as true or false.

95. $\sqrt{16x^{16}} = 4x^8$

96. $\sqrt{x^2 + y^2} = x + y$

97. $\dfrac{\sqrt{x^2 - 25}}{\sqrt{x - 5}} = \sqrt{x + 5}$

98. $\sqrt[3]{x^6} \cdot \sqrt[3]{x^3 - 1} = x^2\sqrt[3]{x - 1}$

99. $\sqrt[3]{(8b^6)^2} = \left(\sqrt[3]{8b^6}\right)^2$

100. $\dfrac{\sqrt[3]{8x^3}}{\sqrt[3]{2x}} = \sqrt[3]{4x^2}$

Solve algebraically and graphically.

$$2\sqrt{x+3} \leq -x+5$$

Find the inverse of $f(x)$. Restrict the domain of $f(x)$ so that the inverse is a function.

$$f(x) = -2x^2 + 12x - 13$$

Solve.

$$\sqrt[3]{3x-4}+5=3 \qquad\qquad \sqrt{x-1}=\sqrt{2x-1}-1$$

Two functions, f and g, are defined using the tables below.

x	-2	-1	0	1	2	3
f(x)	3	2	3	2	3	2

x	-2	-1	0	1	2	3
g(x)	3	2	1	0	-1	-2

Evaluate the following.

a. $(f \circ g)(1) =$

b. $(f \circ g)(3) =$

c. $(g \circ f)(0) =$

$$\frac{\sqrt{50}+7}{\sqrt{50}-7}+\frac{\sqrt{50}-7}{\sqrt{50}+7} \qquad \frac{\sqrt{12}-\sqrt{27}}{6}\cdot\sqrt{3}\cdot\sqrt{4}$$

$$\frac{7\sqrt{x^2y^4}\cdot\sqrt{36xy}}{6\sqrt{x^{-6}y^{-2}}\cdot\sqrt{49x^{-1}y^{-3}}}$$

Let $f(x) = x + 2$ and $g(x) = x^2$

Find   (a) $(f + g)(x)$ (b) $(f - g)(x)$

   (c) $(f \cdot g)(x)$ (d) $\left(\dfrac{f}{g}\right)(x)$

(e) What is the domain of each new function?