

HOMWORK--SOLUTION KEY

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 Chapter # 7 Lesson # 7.3-7.4

Subject: Algebra 2

Period 3RD & 4TH

Quiz 2

#1) $(5x^2 - x^{\frac{1}{3}}) - 4x^{\frac{1}{3}} = \underline{5x^2 - 5x^{\frac{1}{3}}}$
 domain = all \mathbb{R}

#2) $(5x^2 - x^{\frac{1}{3}}) \cdot (4x^{\frac{1}{3}}) = \underline{20x^{\frac{7}{3}} - 4x^{\frac{2}{3}}}$
 domain = all \mathbb{R}

#5) $f(g(x)) = f(x-6) = 4(x-6)^{-1} = \underline{\frac{4}{x-6}}$
 domain = ~~all \mathbb{R}~~ $x \neq 6$

#6) $g(f(x)) = g(\frac{4}{x}) = \underline{\frac{4}{x} - 6}$
 domain = ~~all \mathbb{R}~~ $x \neq 6$

#8) $f(g(x)) = f(\frac{x+2}{3}) = 3(\frac{x+2}{3}) - 2 = x+2-2 = x \checkmark$

$g(f(x)) = g(3x-2) = \frac{(3x-2)+2}{3} = \frac{3x}{3} = x \checkmark$

#3) $(5x^2 - x^{\frac{1}{3}}) + 4x^{\frac{1}{3}} = \underline{5x^2 + 3x^{\frac{1}{3}}}$
 domain = all \mathbb{R}

#4) $\frac{5x^2 - x^{\frac{1}{3}}}{4x^{\frac{1}{3}}} = \frac{x^{\frac{1}{3}}(5x^{\frac{5}{3}} - 1)}{x^{\frac{1}{3}}(4)} = \underline{\frac{5x^{\frac{5}{3}} - 1}{4}}$
 domain = all \mathbb{R} except $x=0$

#7) $f(f(x)) = f(\frac{4}{x}) = 4(\frac{4}{x})^{-1} = 4(\frac{x}{4}) = x$
 domain = $x \neq 0$

#9) $f(g(x)) = f(x^4+2) = (x^4+2-2)^{\frac{1}{4}} = (x^4)^{\frac{1}{4}} = x \checkmark$

$g(f(x)) = g((x-2)^{\frac{1}{4}}) = [(x-2)^{\frac{1}{4}}]^4 + 2 = x-2+2 = x \checkmark$

#10) $f(x) = 2x+7$
 $y = 2x+7$
 $x = 2y+7$
 $2y = x-7$
 $y = \frac{x-7}{2} = \underline{\frac{x-7}{2}}$

#11) $g(x) = 3x^4, x > 0$
 $y = 3x^4$
 $x = 3y^4$
 $y^4 = \frac{x}{3}$
 $y = \underline{(\frac{x}{3})^{\frac{1}{4}}}$