T12 Review: Solving Rational Exp EQs; Operations w/Functions

Solve each equation. Remember to check for extraneous solutions.

1) $4x^{\frac{5}{3}} - 1 = 4095$

2) $40 = 5(a - 7)^{\frac{1}{2}}$

3) $8 = \sqrt[3]{\dfrac{x}{2}} + 6$

4) $\sqrt[4]{9n} + 4 = 7$

Perform the indicated operation. State the domain. Evaluate at the given value.

5) $g(x) = x^2 - 5x$

   $h(x) = 2x - 1$

   Find $(g + h)(x)$

   Find $(g + h)(-3)$

6) $g(x) = x^3 + 4x$

   $h(x) = x - 4$

   Find $(g - h)(x)$

   Find $(g - h)(5)$

7) $g(x) = 2x^3$

   $h(x) = \sqrt[3]{x}$

   Find $(g \cdot h)(x)$

   Find $(g \cdot h)(-3)$

8) $f(t) = 4x$

   $g(t) = x^{\frac{3}{4}}$

   Find $\left(\dfrac{f}{g}\right)(x)$

   Find $\left(\dfrac{f}{g}\right)(16)$

State if growth or decay. State the growth decay factor.

9) $y = 5\left(\dfrac{1}{2}\right)^x$

10) $y = 5(4^x)$

11) $y = 203 \cdot 1.43^x$

12) $y = 42 \cdot 0.28^x$