Algebra 2 Name_____

Practice Quiz - 6.1-6.4

Simplify. Your answer should contain only positive exponents.

1) $\dfrac{2}{2^2 \cdot (2^{-2})^0}$

$\dfrac{1}{2}$

2) $\dfrac{2 \cdot 2^{-4}}{(2^{-4})^{-3}}$

$\dfrac{1}{2^{15}}$

Simplify.

3) $n^{\frac{3}{2}} \cdot \left(n^{\frac{3}{2}}\right)^2$

$n^{\frac{9}{2}}$

4) $n^{\frac{1}{2}} n^2$

$n^{\frac{5}{2}}$

Write each expression in radical form.

5) $5^{\frac{5}{4}}$

$\left(\sqrt[4]{5}\right)^5$

6) $7^{\frac{1}{2}}$

$\sqrt{7}$

Write each expression in exponential form.

7) $\left(\sqrt[5]{3}\right)^8$

$3^{\frac{8}{5}}$

8) $\left(\sqrt[4]{2}\right)^7$

$2^{\frac{7}{4}}$

Simplify.

9) $\sqrt{96u^2v^4}$

$4v^2u\sqrt{6}$

Perform the indicated operation.

10) $h(n) = 2n + 1$
$g(n) = n^2 + n$
Find $h(n) + g(n)$

$n^2 + 3n + 1$

11) $h(x) = 3x^3 + x$
$g(x) = x - 3$
Find $5h(x) - 4g(x)$

$15x^3 + x + 12$

12) $f(a) = a^2 - 5a$
$g(a) = -3a - 3$
Find $f(g(a))$

$9a^2 + 33a + 24$

13) $h(t) = 4t - 2$
$g(t) = t^2 + 4$
Find $h(g(t))$

$4t^2 + 14$

14) $f(x) = x - 3$
$g(x) = 2x^3 + 3x^2 - x$
Find $f(g(-2))$

-5

15) $g(x) = 4x - 4$
$f(x) = x^2 + 1$
Find $g(f(-7))$

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Evaluate each function.

16) $f(x) = 3x + 2$; Find $f(-5)$

-13

17) $f(n) = 3n + 5$; Find $f(-3)$

-4

Find the inverse of each function.

18) $f(x) = \dfrac{x + 1}{2}$

$f^{-1}(x) = 2x - 1$

19) $g(x) = -3 + (x + 1)^5$

$g^{-1}(x) = \sqrt[5]{x + 3} - 1$

20) $f(x) = \sqrt[3]{x + 1}$

$f^{-1}(x) = x^3 - 1$