

SM3 HW #7-4 (Review)

Date _____ Period _____

Perform the indicated operation.

$$1) \begin{aligned} g(n) &= n^3 - 4n^2 \\ f(n) &= 3n + 4 \\ \text{Find } (g \circ f)(n) \end{aligned}$$

$$2) \begin{aligned} g(a) &= 2a - 5 \\ h(a) &= 3a^3 + 4 \\ \text{Find } (g \circ h)(a) \end{aligned}$$

$$3) \begin{aligned} f(n) &= 2n - 4 \\ g(n) &= 3n + 2 \\ \text{Find } (f \circ g)(-8) \end{aligned}$$

$$4) \begin{aligned} f(a) &= -a - 2 \\ g(a) &= -3a^3 + 3a \\ \text{Find } (f \circ g)(1) \end{aligned}$$

Find the inverse of each function.

$$5) f(n) = \frac{3n - 15}{5}$$

$$6) g(x) = -2(x + 1)^3$$

$$7) g(x) = \sqrt[3]{x - 3}$$

$$8) h(x) = \frac{1}{-x - 3} + 1$$

$$9) g(x) = \frac{2x}{x - 4} - 5$$

$$10) g(x) = \frac{3x}{2x + 1} + 6$$

$$g^{-1}(x) = ?$$

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Rewrite each equation in exponential form.

11) $\log_5 a = -16$

12) $\log_n 49 = m$

Rewrite each equation in logarithmic form.

13) $18^m = 127$

14) $2^p = 158$

Condense each expression to a single logarithm.

15) $25 \log_6 x + 5 \log_6 y$

16) $4 \log_7 u + 5 \log_7 v$

Find the inverse of each function.

17) $y = \log_2 (x - 2)$

18) $y = \log_6 x + 5$

19) $y = 10^{\frac{x}{4}}$

20) $y = \frac{e^x}{2}$

Solve each equation.

21) $-4 + \log_{11} (m + 4) = -4$

22) $9 \log_3 -9x = -18$

Solve each equation. Round your answers to the nearest ten-thousandth.

23) $9 \cdot 2^{n-9} = 51.1$

24) $2^{7m} - 1 = 19$

Solve each equation by factoring.

25) $6x^2 - 56 = 5x$

26) $5n^2 = -16n + 16$