

Mixed Review Ch 8 / Ch 9 w/s 2

Date _____ Period _____

Perform the indicated operation.

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

$$2) \begin{aligned} f(n) &= -3n^2 - n \\ g(n) &= 3n + 5 \\ \text{Find } f(n) \cdot g(n) \end{aligned}$$

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

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

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

$$6) \begin{aligned} f(a) &= 2a - 4 \\ g(a) &= 3a - 3 \\ \text{Find } f(g(-6)) \end{aligned}$$

Write each expression in exponential form.

$$7) (\sqrt{x})^5$$

$$8) (\sqrt[3]{v})^4$$

Write each expression in radical form.

$$9) n^{\frac{4}{5}}$$

$$10) (3n)^{\frac{1}{4}}$$

Simplify.

$$11) (125v^9)^{\frac{4}{3}}$$

$$12) (81n^2)^{\frac{3}{2}}$$

$$13) \sqrt[4]{32m^4n^6}$$

$$14) \sqrt[3]{54a^5b}$$

$$15) \sqrt[4]{32p^6qr^8}$$

$$16) \sqrt[3]{-162xy^8z^3}$$

Solve each equation.

$$17) 7 + (2x + 56)^{\frac{1}{3}} = 11$$

$$18) 997 = -3 + (-25 - 5n)^{\frac{3}{2}}$$

Solve each equation. Remember to check for extraneous solutions.

$$19) 7\sqrt{k - 8} = 49$$

$$20) -4 + \sqrt{\frac{n}{10}} = -2$$

$$21) -r + \sqrt{5r - 41} = -7$$

$$22) 1 + \sqrt{4x - 8} = x$$

$$23) x - 7 = \sqrt{13 - x}$$

$$24) n = 10 + \sqrt{64 - 7n}$$

Answers to Mixed Review Ch 8 / Ch 9 w/s 2 (ID: 1)

1) $-n^3 + 5n$

5) 57

9) $(\sqrt[5]{n})^4$

13) $2mn\sqrt[4]{2n^2}$

17) $\{4\}$

21) $\{10, 9\}$

2) $-9n^3 - 18n^2 - 5n$

6) -46

10) $\sqrt[4]{3n}$

14) $3a\sqrt[3]{2a^2b}$

18) $\{-25\}$

22) $\{3\}$

3) $-3n^3 - 9n^2 + 4$

7) $\frac{5}{x^2}$

11) $625v^{12}$

15) $2r^2p\sqrt[4]{2p^2q}$

19) $\{57\}$

23) $\{9\}$

4) $x^2 + 6x + 8$

8) $\frac{4}{v^3}$

12) $729n^3$

16) $-3y^2z\sqrt[3]{6xy^2}$

20) $\{40\}$

24) No solution.