

Chapter 2 Review

1. Identify the algebraic properties that justify the equivalence of the following pairs of algebraic expressions.

a. $(a + 9b) + 8c = 6a + (9b + 8c)$

b. $7y + 4y = (7 + 4)y$

c. $9(6 - 3t) = 54 - 27t$

d. $(a + 3b)9c = (3b + 4a)9c$

[1] _____

Evaluate the expression.

2. $4 - 18 \cdot 5 \div 9 + 5$

[2] _____

3. $\frac{64 \cdot 4^2 - 4 \cdot 5^2}{5 + 4^2}$

[3] _____

4. $(9)^{\frac{3}{2}}$ [A] $\frac{27}{2}$

[B] $\frac{1}{27}$

[C] 27

[D] $\frac{2}{27}$

[4] _____

Evaluate the expression.

5. $\left(\frac{9}{4}\right)^2$ [A] $\frac{9}{2}$ [B] $\frac{81}{4}$ [C] $\frac{81}{16}$ [D] $\frac{16}{81}$

[5] _____

6. $\left(\frac{2}{5}\right)^{-2}$

[6] _____

7. $(-3)^{-3}$

[7] _____

Simplify the expression.

8. $4x^4(2x^5)$

[8] _____

9. $\frac{(x^4y^7)(x^4y)}{(x^8y)^2}$

[9] _____

Determine whether the relation is a function and state the domain and the range.

10. $\{(6, 9) (8, 1), (8, 7) (1, 6)\}$

[10] _____

11.

x	y
12	12
13	12
11	16
18	15

[11] _____

12. Lionel Buford plans to decorate T-shirts to sell at a crafts fair. The decorations cost \$40.50 and the T-shirts cost \$4.75 each.
- Write a function expressing the cost, $C(x)$, of the project in terms of the number of T-shirts decorated, x .
 - Determine the cost of decorating 30 T-shirts.
 - How many T-shirts can be decorated with a budget of \$230.50?

[12] _____

13. If $f(x) = 4 - x^2$ and $g(x) = 2 - x$, find the rule of the function $(f + g)(x)$.

[13] _____

14. If $f(x) = 9 - x^2$ and $g(x) = 3 - x$, find the rule of the function $(f - g)(x)$.

[14] _____

15. If $f(x) = 4 - x^2$ and $g(x) = 2 - x$, find the rule of the function $(f \cdot g)(x)$.

[15] _____

16. If $f(x) = 7 - x^2$ and $g(x) = 1 - x$, find the rule of the function $\frac{f}{g}(x)$.

[16] _____

17. For the pair of functions, f and g , find $(g \circ f)(x)$ and $(f \circ g)(x)$.
 $f(x) = 3 + x$, $g(x) = x - 4$

[17] _____

18. For the pair of functions, f and g , find $(g \circ f)(x)$ and $(f \circ g)(x)$.
 $f(x) = 2 + x$, $g(x) = x^2 - 1$

[18] _____

Find the inverse of the function.

19. $f(x) = \{(4, 2) (2, 4) (-1, -2)\}$

[19] _____

Find the inverse of the function.

20. $f(x) = \frac{x-7}{4}$

[20] _____