ILLAWARRA TUTORING

This worksheet focuses on substitution. You will learn to replace variables with numerical values in expressions and evaluate them correctly. Follow the instructions carefully for each question.

Easy Questions

1. Replace the variable in $3x + 5$ with $x = 2$ and evaluate the expression.
2. Substitute $a = 4$ into $a - 7$ and compute the result.
3. Evaluate $2y + 3$ when $y = 5$ by substituting the given value.
4. Replace $z = 3$ in $(z + 9)$ and calculate the value.
5. Given $m = 2$, substitute in $4m - 1$ and find the result.

Intermediate Questions

6. Substitute $x = 3$ into $2x + 4$ and evaluate the expression.
7. Using $b = -2$, evaluate $5b + 8$ by substituting the value.
8. Replace $p = 3$ and $q = 4$ in $2p + q - 3$ and calculate the result.
9. Substitute $r = 5$ into $3(r - 2)$ and find the value.
10. Given $s = 7$, evaluate $4(s - 5) + 2$ by substituting the value.
11. Replace $x = 2$ and $y = 3$ in $x + y + 4$ and compute the sum.
12. Let $t = -3$. Substitute in $2t - 6$ and evaluate the expression.
13. Substitute $a = 2.5$ into $3a + 7$ and evaluate the result.
14. Evaluate $5k - 2$ when $k = 4$ by substituting the value.
15. Given $m = 3$ and $n = 2$, substitute into $2m + n + 1$ and calculate the value.
16. Replace $u = 6$ in $3(u - 2) + 4$ and evaluate the expression.
17. Substitute $v = 4$ into $2v + 3(v + 1)$ and find the result.
18. Given $w = 10$, substitute in $4(w - 3) - 2$ and compute the value.
19. Replace $x = 5$ in $7 - 2x$ and evaluate the expression.
20. Substitute $y = 3$ into $2(y + 4) + y$ and evaluate the result.

Hard Questions

21. A rectangle has a length given by $2a + 3$ and a width given by $a + 1$. Substitute $a = 4$ to find the area of the rectangle.

22. Evaluate $f(x) = 3x^2 - 2x + 1$ for $x = 5$ by substituting the value into the function.

23. Given the expression $2x^2 + 3y - 4$, substitute $x = 2$ and $y = 5$ and compute the result.

24. Evaluate $2[(x+2)^2] - 3[x+1]$ when $x = 3$ by substituting the value and simplifying.

25. For the function $f(t) = 2t^3 - 5t + 7$, substitute $t = -2$ and evaluate the result.

26. Substitute $x = 3$ into $4(x + 5) - 2(2x - 1)$ and evaluate the expression.

27. Evaluate $3[2(x-1)+4] - 5(x+2)$ for $x = 4$ by first substituting and then simplifying.

28. Given $\dfrac{2x + 3}{x - 1}$, substitute $x = 5$ and determine the value of the expression.

29. Substitute $a = 3$ into $3(2a - 1) - 2(3a + 4)$ and evaluate the result.

30. Evaluate $2[x + 3(y - 2)] - 3[2x - y + 4]$ by substituting $x = 5$ and $y = 7$, then simplify to obtain the final answer.