

Inverse Function Derivatives by Formula

Use the inverse-function derivative theorem to write g' in terms of g, then calculate the exact derivative at the given point.

1. Given $g(-12) = 2$

$f(x) = -5 \cdot x - 2$

Write $g'(x)$ in terms of $g(x)$, then find $g'(-12)$.

$g'(x) =$ _____

$g'(-12) =$ _____

2. Given $g(-4) = -2$

$f(x) = -1 \cdot x^2 - 3 \cdot x - 6$

Write $g'(x)$ in terms of $g(x)$, then find $g'(-4)$.

$g'(x) =$ _____

$g'(-4) =$ _____

3. Given $g(-1) = 2$

$f(x) = 3 \cdot x^3 - 6 \cdot x^2 + 2 \cdot x - 5$

Write $g'(x)$ in terms of $g(x)$, then find $g'(-1)$.

$g'(x) =$ _____

$g'(-1) =$ _____

4. Given $g(-6) = 0$

$f(x) = 5 \cdot x^4 - 5 \cdot x^3 - 6 \cdot x^2 + 4 \cdot x - 6$

Write $g'(x)$ in terms of $g(x)$, then find $g'(-6)$.

$g'(x) =$ _____

$g'(-6) =$ _____

5. Given $g(-256) = 2$

$f(x) = -6 \cdot x^5 - 2 \cdot x^4 - 1 \cdot x^3 - 5 \cdot x^2 - 4$

Write $g'(x)$ in terms of $g(x)$, then find $g'(-256)$.

$g'(x) =$ _____

$g'(-256) =$ _____

6. Given $g(2) = 0$

$f(x) = -4 \cdot x + 2$

Write $g'(x)$ in terms of $g(x)$, then find $g'(2)$.

$g'(x) =$ _____

$g'(2) =$ _____

7. Given $g(-4) = 0$

$f(x) = 6 \cdot x^2 + 3 \cdot x - 4$

Write $g'(x)$ in terms of $g(x)$, then find $g'(-4)$.

$g'(x) =$ _____

$g'(-4) =$ _____

8. Given $g(4) = -1$

$f(x) = 6 \cdot x^3 + 2 \cdot x^2 - 3 \cdot x + 5$

Write $g'(x)$ in terms of $g(x)$, then find $g'(4)$.

$g'(x) =$ _____

$g'(4) =$ _____

9. Given $g(68) = -2$

$f(x) = 3 \cdot x^4 + 6 \cdot x^2 + 5 \cdot x + 6$

Write $g'(x)$ in terms of $g(x)$, then find $g'(68)$.

$g'(x) =$ _____

$g'(68) =$ _____

10. Given $g(2) = -1$

$f(x) = -1 \cdot x^5 + x^4 + 3 \cdot x^3 + 6 \cdot x^2 - 2 \cdot x - 5$

Write $g'(x)$ in terms of $g(x)$, then find $g'(2)$.

$g'(x) =$ _____

$g'(2) =$ _____

11. Given $g(0) = -1$

$f(x) = -5 \cdot x - 5$

Write $g'(x)$ in terms of $g(x)$, then find $g'(0)$.

$g'(x) =$ _____

$g'(0) =$ _____

12. Given $g(2) = -1$

$f(x) = -6 \cdot x^2 - 3 \cdot x + 5$

Write $g'(x)$ in terms of $g(x)$, then find $g'(2)$.

$g'(x) =$ _____

$g'(2) =$ _____

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13. Given $g(19) = -2$

$f(x) = -5 \cdot x^3 - 6 \cdot x^2 + 3$

Write $g'(x)$ in terms of $g(x)$, then find $g'(19)$.

$g'(x) =$ _____

$g'(19) =$ _____

14. Given $g(-12) = -1$

$f(x) = -6 \cdot x^4 + 3 \cdot x^3 + 2 \cdot x^2 - 1 \cdot x - 6$

Write $g'(x)$ in terms of $g(x)$, then find $g'(-12)$.

$g'(x) =$ _____

$g'(-12) =$ _____

15. Given $g(6) = 0$

$f(x) = 6 \cdot x^5 + x^4 + 6 \cdot x^3 - 5 \cdot x^2 - 4 \cdot x + 6$

Write $g'(x)$ in terms of $g(x)$, then find $g'(6)$.

$g'(x) =$ _____

$g'(6) =$ _____

16. Given $g(-18) = 2$

$f(x) = -6 \cdot x - 6$

Write $g'(x)$ in terms of $g(x)$, then find $g'(-18)$.

$g'(x) =$ _____

$g'(-18) =$ _____

17. Given $g(13) = -2$

$f(x) = 4 \cdot x^2 - 3$

Write $g'(x)$ in terms of $g(x)$, then find $g'(13)$.

$g'(x) =$ _____

$g'(13) =$ _____

18. Given $g(6) = 1$

$f(x) = -4 \cdot x^3 + 5 \cdot x^2 + x + 4$

Write $g'(x)$ in terms of $g(x)$, then find $g'(6)$.

$g'(x) =$ _____

$g'(6) =$ _____

19. Given $g(-6) = 1$

$f(x) = -6 \cdot x^4 - 3 \cdot x^3 - 6 \cdot x^2 + 5 \cdot x + 4$

Write $g'(x)$ in terms of $g(x)$, then find $g'(-6)$.

$g'(x) =$ _____

$g'(-6) =$ _____

20. Given $g(-18) = -1$

$f(x) = 6 \cdot x^5 - 4 \cdot x^4 - 1 \cdot x^3 - 1 \cdot x^2 + 6 \cdot x - 2$

Write $g'(x)$ in terms of $g(x)$, then find $g'(-18)$.

$g'(x) =$ _____

$g'(-18) =$ _____

21. Given $g(2) = 0$

$f(x) = -5 \cdot x + 2$

Write $g'(x)$ in terms of $g(x)$, then find $g'(2)$.

$g'(x) =$ _____

$g'(2) =$ _____

22. Given $g(4) = 1$

$f(x) = 5 \cdot x^2 + 3 \cdot x - 4$

Write $g'(x)$ in terms of $g(x)$, then find $g'(4)$.

$g'(x) =$ _____

$g'(4) =$ _____

23. Given $g(2) = 0$

$f(x) = -6 \cdot x^3 - 1 \cdot x^2 - 3 \cdot x + 2$

Write $g'(x)$ in terms of $g(x)$, then find $g'(2)$.

$g'(x) =$ _____

$g'(2) =$ _____

24. Given $g(0) = 1$

$f(x) = 6 \cdot x^4 + 3 \cdot x^3 - 6 \cdot x^2 - 3 \cdot x$

Write $g'(x)$ in terms of $g(x)$, then find $g'(0)$.

$g'(x) =$ _____

$g'(0) =$ _____