

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

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 $g'(-12)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(-12) = \underline{\hspace{10cm}}$$

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 $g'(-4)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(-4) = \underline{\hspace{10cm}}$$

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 $g'(-1)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(-1) = \underline{\hspace{10cm}}$$

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 $g'(-6)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(-6) = \underline{\hspace{10cm}}$$

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 $g'(-256)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(-256) = \underline{\hspace{10cm}}$$

6. Given $g(2) = 0$

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

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

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(2) = \underline{\hspace{10cm}}$$

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 $g'(-4)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(-4) = \underline{\hspace{10cm}}$$

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 $g'(4)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(4) = \underline{\hspace{10cm}}$$

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 $g'(68)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(68) = \underline{\hspace{10cm}}$$

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 $g'(2)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(2) = \underline{\hspace{10cm}}$$

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

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

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

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(0) = \underline{\hspace{10cm}}$$

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 $g'(2)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(2) = \underline{\hspace{10cm}}$$

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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 $g'(19)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(19) = \underline{\hspace{10cm}}$$

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 $g'(-12)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(-12) = \underline{\hspace{10cm}}$$

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 $g'(6)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(6) = \underline{\hspace{10cm}}$$

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

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

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

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(-18) = \underline{\hspace{10cm}}$$

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

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

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

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(13) = \underline{\hspace{10cm}}$$

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 $g'(6)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(6) = \underline{\hspace{10cm}}$$

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 $g'(-6)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(-6) = \underline{\hspace{10cm}}$$

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 $g'(-18)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(-18) = \underline{\hspace{10cm}}$$

21. Given $g(2) = 0$

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

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

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(2) = \underline{\hspace{10cm}}$$

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 $g'(4)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(4) = \underline{\hspace{10cm}}$$

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 $g'(2)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(2) = \underline{\hspace{10cm}}$$

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 $g'(0)$.

$$g'(x) = \underline{\hspace{10cm}}$$

$$g'(0) = \underline{\hspace{10cm}}$$