M	A	T	H	O
$f'(x) = nx^{n-1}$	$f'(x) = 3x^2 - 8x + 5$	$\frac{dy}{dx} = -\frac{3}{2}$	$f'(0) = 0$	$f'(-2) = -1$
$f'(-2) = -32$	$f'(1) = 5$	$f'(x) = -\frac{1}{2}x^{-3/2}$	$\frac{dy}{dx} = \frac{-2}{x^2}$	$f'(x) = \frac{1}{3\sqrt[3]{x^2}}$
$\frac{dy}{dx} = \frac{8}{5}x$	$f'(x) = \frac{1}{2\sqrt{x}}$		$f'(x) = \frac{2}{3\sqrt[3]{x}}$	$y - 1 = -4(x - 0)$
$f'(x) = -4x^{-5}$	$f'(x) = -6x^{-4}$	False	$y - 0 = 2(x - 1)$	$y' = 3x^2 - 4$
$y - 21 = -16(x + 2)$	True	x = 1, x = -1	$y' = -2x^3 + 9x^2 - 2$	x = -1

M	A	T	H	O
Zero	$f'(x) = nx^{n-1}$	$f'(x) = 3x^2 - 8x$	$f'(x) = 3x^2 - 8x + 5$	$f'(1) = 4$
$\frac{dy}{dx} = \frac{-2}{x^2}$	$\frac{dy}{dx} = \frac{8}{5}x$	$\frac{dy}{dx} = -\frac{3}{2}$	$f'(x) = \frac{1}{2\sqrt{x}}$	$f'(x) = \frac{1}{3\sqrt[3]{x^2}}$
$y' = -2x^3 + 9x^2 - 2$	$y' = -\frac{1}{3}x^{5/3}$		x = 0	x = -1
$\frac{dy}{dx} = \frac{-2}{x^2}$	$\frac{dy}{dx} = \frac{8}{5}x$	$\frac{dy}{dx} = -\frac{3}{2}$	$f'(x) = \frac{1}{2\sqrt{x}}$	$f'(x) = \frac{1}{3\sqrt[3]{x^2}}$
$f'(x) = \frac{2}{3\sqrt[3]{x}}$	$f'(x) = -4x^{-5}$	$f'(x) = -\frac{1}{2}x^{-3/2}$	$f'(x) = -6x^{-4}$	$y - 1 = -4(x - 0)$

M	A	T	H	O
$f'(0)=3$	$f'(1)=5$	$f'(-2)=-1$	x = 0	x = -1
$y-21=-16(x+2)$	$f'(x)=-\frac{1}{2}x^{-3/2}$	$f'(x)=-6x^{-4}$	$y-1=-4(x-0)$	$f'(0)=0$
$f'(x)=\frac{2}{3\sqrt[3]{x}}$	$f'(x)=-4x^{-5}$		Zero	$f'(x)=nx^{n-1}$
False	True	$y'=3x^2-4$	$\frac{dy}{dx}=\frac{-2}{x^2}$	$\frac{dy}{dx}=\frac{8}{5}x$
$f'(x)=nx^{n-1}$	$f'(x)=3x^2-8x$	$f'(x)=3x^2-8x+5$	$f'(x)=\frac{1}{2\sqrt{x}}$	$f'(x)=\frac{1}{3\sqrt[3]{x^2}}$

M	A	T	H	O
$y-0=2(x-1)$	$y-21=-16(x+2)$	$f'(x)=\frac{2}{3\sqrt[3]{x}}$	$f'(x)=-4x^{-5}$	$f'(x)=-\frac{1}{2}x^{-3/2}$
$\frac{dy}{dx}=-\frac{3}{2}$	$f'(x)=\frac{1}{2\sqrt{x}}$	$f'(x)=\frac{1}{3\sqrt[3]{x^2}}$	$f'(x)=-6x^{-4}$	$y-1=-4(x-0)$
$\frac{dy}{dx}=\frac{-2}{x^2}$	$\frac{dy}{dx}=\frac{8}{5}x$		$f'(x)=3x^2-8x+5$	$f'(1)=4$
x = -1	$f'(-2)=-32$	$f'(0)=3$	$f'(1)=5$	$f'(0)=0$
True	$y'=3x^2-4$	Zero	$f'(x)=nx^{n-1}$	$f'(x)=3x^2-8x$

M	A	T	H	O
$f'(0)=0$	$f'(-2)=-32$	$f'(0)=3$	$f'(1)=5$	$f'(-2)=-1$
$\frac{dy}{dx}=\frac{-2}{x^2}$	$\frac{dy}{dx}=\frac{8}{5}x$	$\frac{dy}{dx}=-\frac{3}{2}$	$f'(x)=\frac{1}{2\sqrt{x}}$	$f'(x)=\frac{1}{3\sqrt[3]{x^2}}$
$f'(x)=\frac{2}{3\sqrt[3]{x}}$	$f'(x)=-4x^{-5}$		$f'(x)=-6x^{-4}$	$y-1=-4(x-0)$
$y-0=2(x-1)$	$y-21=-16(x+2)$	False	True	$y'=3x^2-4$
$y'=-2x^3+9x^2-2$	$y'=-\frac{1}{3}x^{5/3}$	x = 1, x = -1	x = 0	x = -1

M	A	T	H	O
Zero	$f'(x)=nx^{n-1}$	$f'(x)=3x^2-8x$	$f'(x)=3x^2-8x+5$	$f'(1)=4$
$f'(0)=0$	$f'(-2)=-32$	$f'(0)=3$	$f'(1)=5$	$f'(-2)=-1$
$\frac{dy}{dx}=\frac{-2}{x^2}$	$\frac{dy}{dx}=\frac{8}{5}x$		$f'(x)=\frac{1}{2\sqrt{x}}$	$f'(x)=\frac{1}{3\sqrt[3]{x^2}}$
$y-0=2(x-1)$	$y-21=-16(x+2)$	False	True	$y'=3x^2-4$
$y'=-2x^3+9x^2-2$	$y'=-\frac{1}{3}x^{5/3}$	x = 1, x = -1	x = 0	x = -1

1. The derivative of a constant is : _____.

2. State the power rule for $f(x) = x^n$.

3. Find the derivative for: $f(x) = x^3 - 4x^2 + 5$

4. Find the derivative for: $f(x) = x^3 - 4x^2 + 5x + 3$

5. Find the slope of the graph of: $f(x) = x^4$ when x = 1.

6. Find the slope of the graph of: $f(x) = x^4$ when x = 0.

7. Find the slope of the graph of: $f(x) = x^4$ when x = –2.

8. Find $f'(0)$. $f(x) = x^2 + 3x - 1$

9. Find $f'(1)$. $f(x) = x^2 + 3x - 1$

10. Find $f'(-2)$. $f(x) = x^2 + 3x - 1$

11. Find $\frac{dy}{dx}$ for $y = \frac{2}{x}$

12. Find $\frac{dy}{dx}$ for $y = \frac{4x^2}{5}$

13. Find $\frac{dy}{dx}$ for $y = -\frac{3x}{2}$

14. If $f(x) = \sqrt{x}$, find $f'(x)$

15. If $f(x) = \sqrt[3]{x}$, find $f'(x)$

16. If $f(x) = \sqrt[3]{x^2}$, find $f'(x)$

17. Find the derivative for: $f(x) = \frac{1}{x^4}$

18. Find the derivative for: $f(x) = \frac{1}{\sqrt{x}}$

19. Find the derivative for: $f(x) = \frac{2}{x^3}$

20. Find the equation of the tangent line for $f(x) = 3x^2 - 4x + 1$ at x = 0.

21. Find the equation of the tangent line for $f(x) = 3x^2 - 4x + 1$ at x = 1.

22. Find the equation of the tangent line for $f(x) = 3x^2 - 4x + 1$ at x = –2.

23. *True or False.* If $y = \pi^2$, then $y' = 2\pi$

24. *True or False.* If $y = \frac{x}{\pi}$, then $y' = \frac{1}{\pi}$

25. Find y'. $y = x^3 - 4x + 5$

26. Find y'. $y = -\frac{x^4}{2} + 3x^3 - 2x$

27. Find y'. $y = \frac{1}{2\sqrt[3]{x^2}}$

28. Find the x-value(s) at which the graph of the function $f(x) = \frac{1}{3}x^3 - x$ has a horizontal tangent line.

29. Find the x-value(s) at which the graph of the function $f(x) = 4x^3 + 5$ has a horizontal tangent line.

30. Find the x-value(s) at which the graph of the function $f(x) = x^2 + 2x - 1$ has a horizontal tangent line.