

### Differentiation Practice

function	altered function	derivative by rule	simplified
1. $y = 3x^5$	=	$\frac{dy}{dx} =$	=
2. $y = 6x^4$	=	$\frac{dy}{dx} =$	=
3. $y = 6\sqrt{x}$	=	$\frac{dy}{dx} =$	=
4. $y = 12\sqrt{x^3}$	=	$\frac{dy}{dx} =$	=
5. $y = \frac{3}{x}$	=	$\frac{dy}{dx} =$	=
6. $y = \frac{4}{x^3}$	=	$\frac{dy}{dx} =$	=
7. $y = \frac{4}{\sqrt{x}}$	=	$\frac{dy}{dx} =$	=
8. $y = \frac{6}{\sqrt{x^3}}$	=	$\frac{dy}{dx} =$	=
9. $y = \frac{x^3}{2}$	=	$\frac{dy}{dx} =$	=
10. $y = \frac{2x^3}{3}$	=	$\frac{dy}{dx} =$	=
11. $y = 2(x+1)^3$	=	$\frac{dy}{dx} =$	=
12. $y = 3(2x-1)^4$	=	$\frac{dy}{dx} =$	=
13. $y = \frac{4}{(3x+1)^2}$	=	$\frac{dy}{dx} =$	=
14. $y = \frac{2}{(3-x)^4}$	=	$\frac{dy}{dx} =$	=
15. $y = 5\sqrt{2x+3}$	=	$\frac{dy}{dx} =$	=
16. $y = 3\sqrt{4x+3}^3$	=	$\frac{dy}{dx} =$	=
17. $y = 3(x^3+1)^4$	=	$\frac{dy}{dx} =$	=
18. $y = 3 \ln(2x+3),$		$\frac{dy}{dx} =$	_____
19. $y = 4 \ln(4x-1),$		$\frac{dy}{dx} =$	_____
20. $y = 3 \ln(6x+5),$		$\frac{dy}{dx} =$	_____
21. $y = \ln(8x+3),$		$\frac{dy}{dx} =$	_____
22. $y = \ln(2x+5),$		$\frac{dy}{dx} =$	_____
23. $y = 3e^{2x},$		$\frac{dy}{dx} =$	_____
24. $y = 2e^{x/4},$		$\frac{dy}{dx} =$	_____
25. $y = 3e^{-3x},$		$\frac{dy}{dx} =$	_____
26. $y = 4e^{-x/2},$		$\frac{dy}{dx} =$	_____
27. $y = 3e^{-x^2},$		$\frac{dy}{dx} =$	_____
28. $y = \ln(1+e^x),$		$\frac{dy}{dx} =$	_____