

DIFFERENTIATION (POWER RULE)

STEP 1: POWER

bring power to
the front

STEP 2: COPY

copy original
function

STEP 3: MINUS 1

power minus
one

STEP 4: DIFFERENTIATE

differentiate the
original function

Differentiate the functions given.

2	3	$\frac{1}{3}$	$(6x + 6)$	(3)	(3)	2	1
$(\frac{1}{3x+2})$	$(\sin 3x)$	$(\cos(7x^2 + 4x))$	$(\cos 3x)$	$(\ln(3x + 2))$	$(2x - 10)$	$-\frac{2}{3}$	$-\frac{1}{2}$
$(x^3 + 1)$	$\frac{1}{8}$	(3)	$(14x + 14)$	(5)	$\frac{2}{5}$	2	4
$\frac{1}{2}$	$(\sec 2x)$	$(3x^2)$	$(3x^2 + 6x + 4)$	$(\frac{1}{x})$	$\frac{1}{3}$	$-\frac{1}{2}$	$-\frac{2}{3}$
$\frac{3}{2}$	5	$\frac{1}{2}$	(2)	$(\ln x)$	$(\frac{1}{\cos x})$	5	2
(6)	$(3x + 5)$	$(\ln(\cos x))$	3	(3)	$(\sec x \tan x)$	$(-\sin x)$	

1. $\cos^3(7x^2 + 4x)$

3

2. $\sqrt[3]{3x^2 + 6x + 4}$

3

3. $5 \sin^3 3x$

3

4. $[\ln(\cos x)]^3$

3

5. $\frac{3}{2}(3x + 5)^6$

6

6. $\frac{1}{8}(2x - 10)^{1/2}$

1/2

7. $\frac{2}{5}(\ln(3x + 2))^5$

5

8. $\sqrt[3]{\ln(x)}$

3

9. $\sec^2(2x)$

2

10. $\sqrt{x^3 + 1}$

2