A.

Find $f'(x)$ of $f(x) = (2x + 3)^3$

$$\frac{3}{\sqrt{8}}$$

S.

Find the slope of the normal line to the graph of $f(\theta) = \sin^2\theta$ when $\theta = \frac{3\pi}{4}$

$$24x^2 + 72x + 54$$

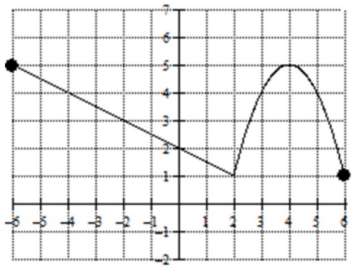
R.

Find $g'(x)$ if $g(x) = \sqrt{2x + 5}$

$$1$$

I.

Given the graph of H(x), find the equation of the tangent line to the graph of $P(x) = \sqrt{H(x)}$ when $x = -4$.



$$\frac{1}{\sqrt{2x + 5}}$$

B.

Find the derivative of

$G(x) = \cos^2 3x$

$y - 2 = -1/8(x + 4)$

Q.

x	$f(x)$	$g(x)$	$f'(x)$	$g'(x)$
2	2	−1	0	−1
3	−5	4	−4	6
4	1	7	8	−2

Is the graph of h(x) = f(g(x)) increasing, decreasing, or at a relative maximum or minimum when x = 3?

$-6\cos 3x \sin 3x$

J.

Find the derivative of

$$f(x) = \left(\frac{x + 5}{x^2 + 2}\right)^3$$

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increasing

H.

If $f(\theta) = \csc 2\theta$, then $f'(x) =$ ___?

$$\frac{-3(x + 5)^2(x^2 + 10x - 2)}{(x^2 + 2)^4}$$

P.

Find h'(x) if
$h(x) = \sqrt{x^2 - 3x + 1}$

$-2\csc 2\theta \cot 2\theta$

C.

If $f(x) = \sqrt{25 - x^2}$, find the equation of the normal line to the graph of f(x) when x = 3.

$$\frac{2x - 3}{2\sqrt{x^2 - 3x + 1}}$$

K.

Find the limit:

$$\lim_{h \to 0} \frac{\cos 3(x + h) - \cos 3x}{h}$$

$y - 4 = 4/3(x - 3)$

O.

Find g'(π) when
$g(\theta) = 1/4\sin^2 2\theta$

$-3\sin 3x$

G.

Find f'(x) when $f(x) = x\sqrt{1 - x^2}$

0

D.

If f(x) = tan4x, what is f'(x)?

$$\frac{1 - 2x^2}{\sqrt{1 - x^2}}$$

L.

x	$f(x)$	$g(x)$	$f'(x)$	$g'(x)$
2	2	−1	0	−1
3	−5	4	−4	6
4	1	7	8	−2

If p(x) = g(2x), what is the value of p'(1)?

$4\sec^2 4x$

F.

Find the equation of the normal line to the graph of h(x) = tan(3x) when $x = \pi/12$?

-2

M.

Find the derivative of

$$f(x) = \sqrt{\frac{2x + 3}{x - 2}}$$

$$y - 1 = -1/6(x - \pi/12)$$

T.

If $f(\theta) = \sec 5\theta$, find $f'(\theta)$.

$$\frac{-7}{2(2x + 3)^{1/2}(x - 2)^{3/2}}$$

E.

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
–2	1	–1	2	4
–1	3	–2	1	1
0	–1	2	–2	–3

If $P(x) = (2f(x) + g(x))^{2/3}$, what is the value of $P'(0)$?

$5\sec 5\theta \tan 5\theta$

N.

x	$f(x)$	$g(x)$	$f'(x)$	$g'(x)$
2	2	–1	0	–1
3	–5	4	–4	6
4	1	7	8	–2

If $q(x) = \sqrt{f(x) + g(x)}$, what is the value of $q'(4)$?

$$\frac{-2}{3\sqrt[3]{4}}$$