f $y = \cancel{\cos^3}(6x^3)$.

2) Find $g'(x)$ if $g(x) = \cancel{\sec^4}(\sin$

$os^2(6x^3)) \cdot (-\sin(6x^3)) \cdot (18x^2)$

$\boxed{4x^2 \cdot \cos^2(6x^3) \cdot \sin(6x^3)}$

$c^3(\cancel{\sin(5x)}) \cdot (\cancel{\sec(\sin(5x))} \cdot \tan(\sin(5x))) \cdot (\cos(5x)) \cdot (\cancel{5}$

$\boxed{20 \cdot \sec^4(\sin(5x)) \cdot \tan(\sin(5x)) \cdot \cos(5x)}$

if $y = \sin\sqrt{(4x^2+1)}$. $= \sin(4x^2+1)^{1/2}$

$y' = \cos(4x^2+1)^{1/2} \cdot \frac{1}{2}(4x^2+1)^{-1/2} \cdot 8x$

$y' = 4x \cdot \cos(4x^2+1)^{1/2} \cdot (4x^2+1)^{-1/2}$

4) Find $\frac{dy}{dx}$ if $y = \tan^4(x^3)$.

$y' = 4\tan^3(x^3) \cdot \sec^2(x^3) \cdot 3$

$y' = 12x^2 \cdot \tan^3(x^3) \cdot \sec^2(x^3)$

if $y = \sin^3\left(\dfrac{x}{1+x^2}\right)$.

6) Find $\dfrac{dy}{dx}$ if $y = \left(\dfrac{1+x^2}{1-x^2}\right)^6$. Simplif

$$-2x^2$$

$$n^2\left(\frac{x}{1+x^2}\right)\cdot \cos\left(\frac{x}{1+x^2}\right)\cdot\left(\frac{1+x^2-x\cdot 2x}{(1+x^2)^2}\right)$$

$$\cdot \sin^2\left(\frac{x}{1+x^2}\right)\cdot \cos\left(\frac{x}{1+x^2}\right)\cdot \frac{1-x^2}{(1+x^2)^2}$$

$y = \left(\dfrac{1+x^2}{1-x^2}\right)^6$. Simplify.

$$2x - \cancel{2x^3} + 2x + \cancel{2x^3}$$

$$y' = 6\left(\frac{1+x^2}{1-x^2}\right)^5\cdot\left(\frac{(1-x^2)\cdot 2x + (1+x^2)\cdot 2x}{(1-x^2)^2}\right)$$

$$y' = 6\left(\frac{1+x^2}{1-x^2}\right)^5\cdot\frac{4x}{(1-x^2)^2}$$

) Find the equation of the tangent line for $f(x) = \sin(3x-5)^2$ at $x = \frac{5\pi}{6}$.

$$y' = \cos(3x-5)^2 \cdot 2(3x-5) \cdot 3$$

$$y' = \cos(3x-5)^2 (18x-30)$$

$$f'(5\pi/6) = \cos\left(3 \cdot \frac{5\pi}{6} - 5\right)^2 \cdot \left(18 \cdot \frac{5\pi}{6} - 30\right)$$

$$= 15.746$$

$$\boxed{y = 15.746x - 41.143}$$

$f\left(\frac{5\pi}{6}\right) = \sin$

$= .0$

$y = mx + b$

$.08 = 15.746$

$b = -41.$

vatives of the given functions.

$\ldots 6x^2+2x)^2$ $=\left(\cos\left(6x^2+2x\right)^2\right)^{1/4}$ 2) $f(x)=\sqrt{\cos\left(\sin^2(x)\right)}$ $=\left(\cos\left(\sin^2(\ldots\right.\right.$

$\ldots\left(6x^2+2x\right)^2\Big)^{-3/4}\cdot\left(-\sin\left(6x^2+2x\right)^2\right)\cdot\left(2\cdot\left(6x^2+2x\right)\cdot\left(12x+2\right)\right)$

$\ldots\cos\left(\sin^2(x)\right)\Big)^{-1/2}\cdot\left(-\sin\left(\sin^2(x)\right)\right)\cdot\left(2\sin(x)\cdot\cos x\right)$

$\ldots st))=$ 4) $D_x\left(\cancel{s}in\left(c\cancel{o}s\left(\cancel{s}in(2x)\right)\right)\right)=$

$y'=3\left(\sin^2(\cos t)\right)\cdot\left(\cos(\cos t)\right)\cdot\left(-\sin t\right)$

$\ldots\cos(\sin(2x)))\Big)\left(-\sin\left(\sin(2x)\right)\right)\left(\cos(2x)\right)\left(2\right)$

$n^2(x^3)$

6) $y = 4x^2\cos(\cos(2x))$

$in^2(x^3) + 3x\cdot(2\sin(x^3))\cdot(\cos(x^3))(3x^2)$

$\sin^2(x^3) + 18x^3\cdot\sin(x^3)\cdot\cos(x^3)$

$\cdot\cos(\cos(2x)) + 4x^2\cdot(-\sin(\cos(2x))\cdot(-\sin(2x))\cdot(2)$

$\cdot\cos(\cos(2x)) + 8x^2\cdot\sin(\cos(2x))\cdot\sin(2x)$

$= \cos(\pi x)\cdot\sin^2(\pi x)$, find $g'(1/2)$.

8) For $y = (x^2+1)^3(x^4+1)^2$, find the equation of the tangent line at $x =$