

25.
$$\sin(xy) = x^{2} - y$$

$$\cos(xy)(i \cdot y + x\frac{dy}{dx}) = 2x - \frac{dy}{dx}$$

$$y\cos(xy) + x\cos(xy)\frac{dy}{dx} = 2x - \frac{dy}{dx}$$

$$x\cos(xy)\frac{dy}{dx} + \frac{dy}{dx} = 2x - y\cos(xy)$$

$$\frac{dy}{dx}(x\cos(xy) + i) = 2x - y\cos(xy)$$

$$\frac{dy}{dx} = \frac{2x - y\cos(xy)}{x\cos(xy) + i}$$

53. Find y" if
$$x^{6} + y^{6} = 1$$
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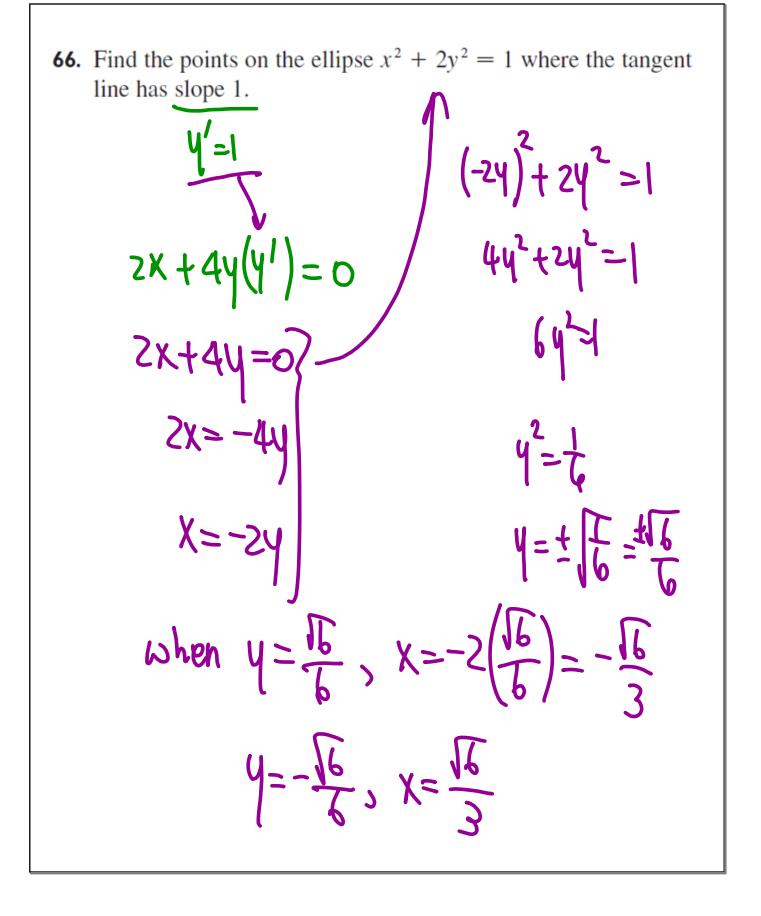
$$6x^{6} + 6y^{6}y' = 0$$

$$y' = \frac{-6x^{5}}{-6y^{5}} = \frac{-x^{6}}{-x^{5}}$$

$$y'' = \frac{-5x^{4}y^{5} + (+x^{5})(5y^{4})y'}{y'^{0}}$$

$$= \left(-5x^{4}y^{5} + x^{5}5y^{4}(-x^{5})\right)y$$

$$= \frac{-5x^{4}y^{6} - 5x^{10}}{(y'^{0})^{9}}$$



31.
$$y = x \tan^{-1}(4x)$$

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

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60–61 Find equations of the tangent line and normal line to the curve at the given point.

60.
$$x^{2} + 4xy + y^{2} = 13$$
, (2, 1)
2X +4(Y + XY) + 2YY = 0
4 +4(1+2Y) + 2Y' = 0
4 +4+8Y' + 2Y' = 0
 $y' = -\frac{4}{5}$
 $y' = -\frac{4}{5}$