Name_____

Differentiate the following functions.

1. $x^2 - 5xy + 3y^2 = 7$
2. $\sin\frac{x}{y} = \frac{1}{2}$
3. $\cos(x+y) + \sin(x+y) = \frac{1}{3}$
4. $\frac{2x+3y}{x^2+y^2} = 9$
5. $x^3 + y^3 = 8$
6. $4x^2 - 9y^2 = 17$
7. $y\tan(x+y) = 4$
8. $\frac{x^2-y^2}{x^2+y^2} = \frac{1}{3}$
9. $e^{\cos x} + e^{\sin y} = 4$
10. $xe^{x^2+y^2} = 4$

Hints:

$$\frac{d}{dx}\left(e^x\right) = e^x$$

$$\frac{d}{dx}\left(e^{f(x)}\right) = e^{f(x)}f'(x)$$