In problems 1-3, find $\dfrac{dy}{dx}$ by implicit differentiation.

1. $x^3 + y^2 = \sin(x) \cdot y$

2. $y \cdot e^y = x + y$

3. $y^x = x \cdot y$

In problems 4-6, find an equation of the tangent line to the curve at the given point if possible.

4. $x^2 + y^3 = 2 \cdot x \cdot y + 1$

     (a) $(0, 1)$

     (b) $(2, 1)$

5. $x \cdot e^y + x^2 + y^2 = 0$

     (a) $(-1, 0)$

     (b) $(1, 1)$

6. $x^2 + y^2 = x \cdot y + x + y$

     (a) $(-1, 0)$

     (b) $(1, 2)$