Class 23 HW SOLUTIONS **to selected problems**. Math 110, Fall 98
Was due 11/02/98: HH, section 4.7: 1, 5, 7, 13, 18; CANCEL #11.

1. $x^2 + y^2 = \sqrt{7}$.
Apply d/dx to both sides: $2x + 2yy' = 0$.
Now solve for y': $2yy' = -2x$, $y' = x/y$.

3. $\ln x + \ln(y^2) = 3$, so $1/x + (1/y^2)2yy' = 0$,
so $(1/y^2)2yy' = -1/x$, so $(2/y)y' = -1/x$, so $y' = -y/(2x)$.

7. We did this in detail in class. See class notes.

11. Cancelled.

18. (a) $x^2 + y^2 = 25$. So $2x + 2yy' = 0$.
Plugging in $x = 4$ into the equation of the circle (not its derivative) gives $y = 3$ or $y = -3$.
Plugging in the point (4,3) into the implicit equation for the derivative, we get:
$2(4) + 2(3)y' = 0$. Solve this to get: $y' = -3/4$.
A similar procedure for the point (4,-3) gives $y' = 3/4$.
Now use the point-slope formula to find equations for the two lines.
Parts (b) and (c) are staightforward. (See class notes.)