Some Hints

(Prob 13) $(1-2x\,e^{2y})\frac{dy}{dx} = e^{2y}$

Easiest way to solve it is by making y the independent variable. ~~Let us use the symbol it for it to do~~

$$(1-2x\,e^{2y})\frac{1}{dx/dy} = e^{2y}$$

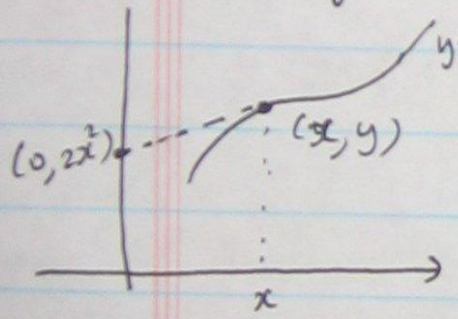
$$(1-2x\,e^{2y}) = e^{2y}\,x'$$

$$e^{-2y} - 2x = x'$$

$$x' + 2x = e^{-2y} \quad \Leftrightarrow \quad x' + p(y)\,x = q(y)$$

The above eqn can easily be solved for $x(y)$.

(Prob 23) Find the function with the property that y intercept of the tangent to the graph at (x,y) is $2x^2$.



Slope of tangent line $\cdot\ m = \frac{y-2x^2}{x-0} = \frac{dy}{dx}$

$\therefore$ The graph obeys the equation

$$\frac{dy}{dx} = \frac{y-2x^2}{x} = \left(\frac{1}{x}\right)y - 2x$$

$$y' - \frac{1}{x}\,y = -2x \qquad p(x) = -1/x,\ q(x) = -2x$$

The above eqn can be solved using the usual technique.