

(1)  $y(x) = \frac{1}{cx-x^2}$

(2) (a)  $k = 3$   
(b)  $\frac{1}{2}x^2y^2 + x^3y = c$

(3)  $\frac{y^2+x^2}{x^2} = c|x|$

(4)  $y(x) = x^2 + x^{-2}$

(5)  $\begin{bmatrix} -\frac{3}{5} \\ -\frac{1}{5} \\ 1 \end{bmatrix} s$ , for any  $s \in \mathbb{R}$

(6)  $k \neq \pm\sqrt{5}$

(7)  $b_{32} = \frac{2}{5}$

(8) Only the first one.