MAT 3130	Quiz 1	NAME:_____
FALL '13	Form A	EMAIL ID:_____

Work quickly and carefully, following directions closely. Answer all questions completely.

FOR ALL PROBLEMS: Define P, Q, R, and S to be the four digits in your given number.

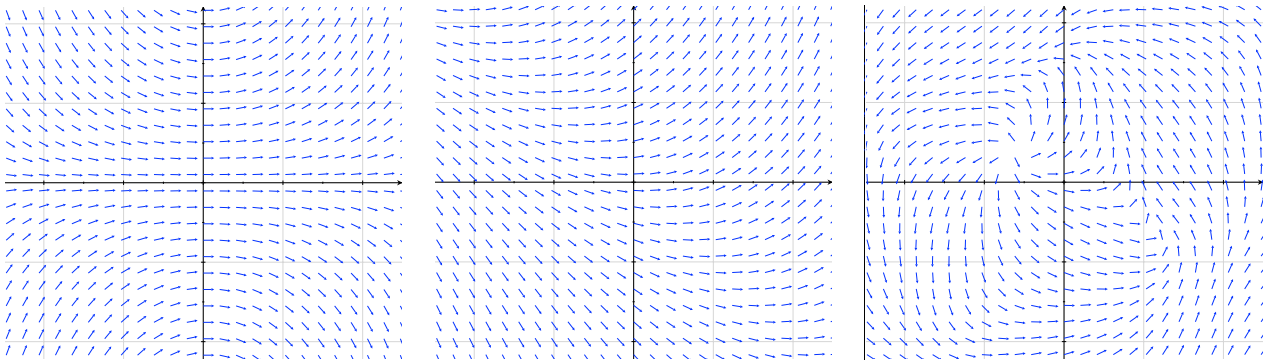
$$P = \_\_\_\_, \qquad Q = \_\_\_\_, \qquad R = \_\_\_\_, \qquad S = \_\_\_\_.$$

§I. TRUE and/or FALSE. Circle your answer. There is 1 question at 2 points.

1. TRUE or FALSE: The differential equation $\dfrac{dy}{dt} = t \cdot \sqrt[3]{y}$ has a unique solution passing through the point $(0, P)$ where P is your number.

§II. MULTIPLE CHOICE. Circle your answer. There is 1 question at 5 points.

1. Which slopefield below is for the differential equation $y' = \frac{1}{2} t\, y$?



(a) (b) (c)

(d) none of the above (e) all of the above

§III. PROBLEMS. *You must show your work to receive credit*. There is 1 problem at 10 points.

1. Solve the initial value problem

$$\frac{dy}{dt} = \frac{t+Q}{y}; \quad y(0) = R$$

where Q and R are your numbers.

☐ EC: TRUE or FALSE: Over half the US population lives in just 146 of the over 3,000 total counties.