

# Exam 1: “Study Guide”

Math 2410-004/013

February 12, 2018

Exam 1 covers sections 1.1 through 2.3 as well as section 2.6. Below I have gathered a bank of questions from each of these sections that I intend to use to generate around 70% of the exam. The questions on the exam will not match these *exactly* but will be of a similar form and content. Some exam questions may draw on more than one of these at a time.

It is my intention that if you can solve all of these problems and do nothing else, you should be able to earn a C on the exam.

I will generate the rest of the exam based upon ideas I emphasized in class, WebAssign, the written homework and homework questions not listed here.

If you have any questions, as always, let me know.

**1.1:** 15, 20, 21, 36

**1.2:** 9, 22, 51

**1.3:** 9, 10

**2.1:** 15, 22, 29, the problem on the following page

**2.2:** 23, 26, 31

**2.3:** 3, 23, 36

**2.6:** 2, 4

### Matching direction fields with the DEs that generate them

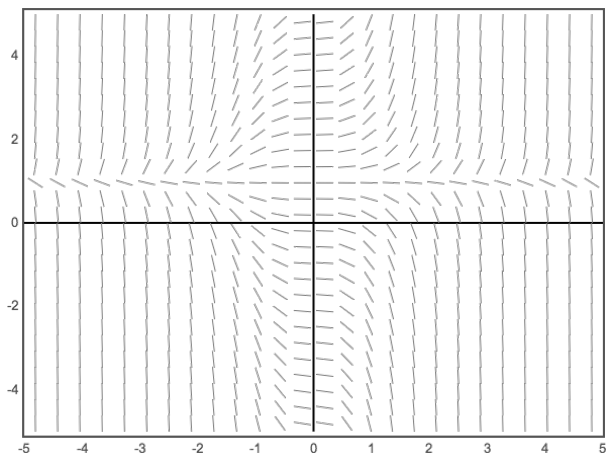
Match the following differential equations with the direction fields they generate on  $-5 \leq x \leq 5$  and  $-5 \leq y \leq 5$ .

(a)  $\frac{dy}{dx} = xy - x$

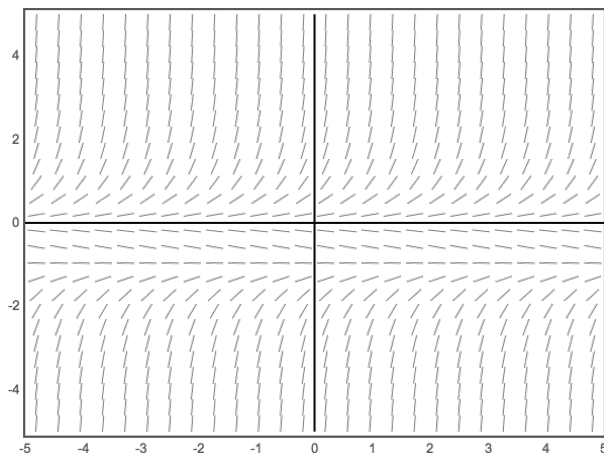
(b)  $\frac{dy}{dx} = y^2 + y$

(c)  $\frac{dy}{dx} = x^2y - x^2$

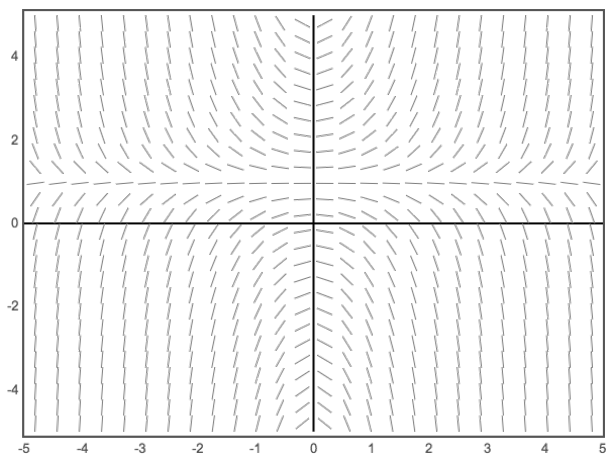
(d)  $\frac{dy}{dx} = y^5 + y^2$



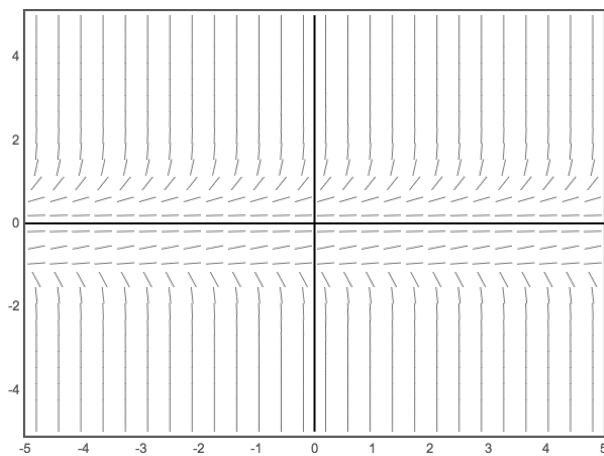
(1) \_\_\_\_\_



(2) \_\_\_\_\_



(3) \_\_\_\_\_



(4) \_\_\_\_\_