

NAME _____

SECTION _____

Fluorescence Microscopy Prelab Quiz (10 pts)

- (1) **2 pts.** Fill in the following table. How many copies of each organelle do you think are present in a typical cell? Use rough estimates (1, 10, 100, 1000, etc.)

ORGANELLE	COPY NUMBER IN CELL
NUCLEUS	
GOLGI APPARATUS	
MITOCHONDRIA	
ENDOPLASMIC RETICULUM	

- (2) **3pts.** Identify the stages of mitosis (interphase, prophase, metaphase, anaphase) in the following images:

 <p>Stage =</p>	 <p>Stage =</p>
 <p>Stage =</p>	

- (3) **2 pts** In the transgenic plants, what color will GFP fluoresce under the blue excitation light (NIB filter)? What color will chloroplasts fluoresce?

- (4) **3 pts** Name the stains you will use to stain the following organelles. Indicate if the stain is a **DIRECT** stain (the fluorescent molecule itself has affinity for the organelle) or if the stain is an **INDIRECT** stain (the fluorescent molecule is attached to another molecule conferring specificity). If the stain is **INDIRECT**, also name the molecule that confers specificity for the organelle.

	STAIN NAME	DIRECT/INDIRECT STAIN
a. Mitochondria		
b. Golgi		
c. Nucleus		