

Name: _____ Period: _____ Date: _____

Open **peebedu.com** and navigate to the **3D Mitosis Interactive**. Choose **Story**, **Interactive** or **Quiz** from the title screen.

Question 1: Analyze Data

Experiment: Researchers grew human cancer cells in ten dishes. Five dishes received an experimental cancer drug, and five received a placebo in place of the drug. After 24 hours, they counted the number of cells in anaphase among 1,000 cells in each dish, as shown in the table.

Number of cells in anaphase per 1,000 cells counted, 24 hours after treatment

Treatment	Dish 1	Dish 2	Dish 3	Dish 4	Dish 5	Mean
Placebo	42	38	45	40	35	40.0
Experimental drug	6	9	4	7	4	6.0

(A) (1 pt) **Describe** the difference in the mean number of cells in anaphase between the placebo group and the drug group.

(B) (1 pt) **Identify** the independent variable in the experiment.

(C) (1 pt) **Evaluate** the hypothesis that the experimental drug slows the division of the cancer cells, using the data.

(D) (1 pt) **Explain** how a drug that prevents the mitotic spindle from forming would reduce the number of cells in anaphase.

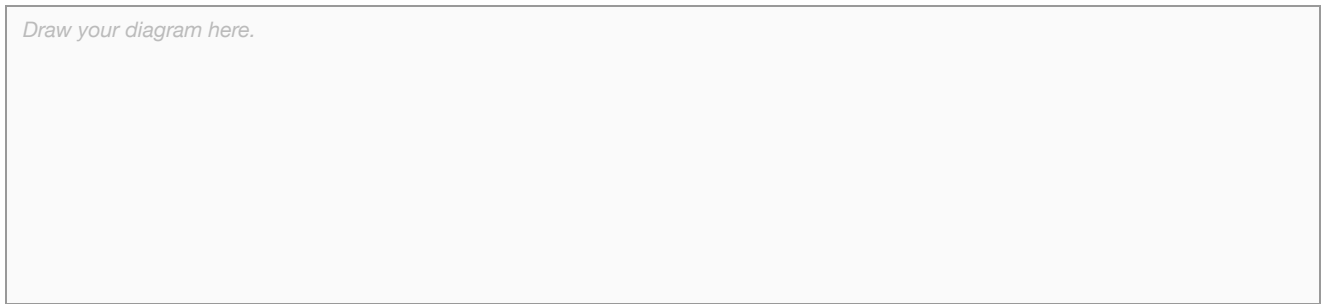
Question 2: Analyze Model / Visual Representation

(A) (1 pt) **Describe** the function of mitosis in unicellular organisms.

(B) (1 pt) **Explain** why the two daughter cells produced by mitosis have identical sets of chromosomes.

(C) (1 pt) **Represent** an animal cell with four chromosomes in anaphase by drawing a labeled diagram that includes the centrosomes, the spindle fibers, and the separating sister chromatids.

Draw your diagram here.



(D) (1 pt) A researcher notices a group of cells with irregular nuclear membranes and claims that something must be going wrong with telophase. **Justify** the researcher's claim.

4.5.B.1