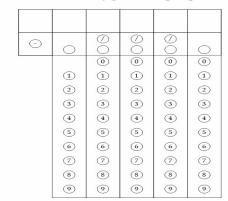Name _____ Date _____

AP Biology Exam Practice

In snapdragons (Antirrhinum), the phenotype for flower color is governed by two alleles - red (R) and white (W). Heterozygous individuals have pink flowers. Two pink individuals are crossed to produce 465 offspring.

Calculate how many of these offspring are expected to have the red phenotype. Round your response to the nearest whole number.

		$\oslash$ $\bigcirc$	$\oslash$ $\bigcirc$	$\oslash$ $\bigcirc$	
$\odot$	$\bigcirc$				$\bigcirc$
		0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
	3	3	3	3	3
	4	4	4	4	4
	5	5	5	5	5
	6	6	6	6	6
	7	7	7	7	7
	8	8	8	8	8
	9	9	9	9	9

In corn (Zea mays), purple kernels (R) are dominant to yellow kernels (r). Cobs from the offspring of a cross between a purple plant and yellow plant were used in a lab. A student counts 329 purple and 299 yellow kernels on one cob.

Calculate the chi-squared value for the null hypothesis that the purple parent was heterozygous for purple kernels. Give your answer to the nearest tenth.

		$\oslash$ $\bigcirc$	$\oslash$ $\bigcirc$	$\oslash$ $\bigcirc$	
$\odot$	$\bigcirc$				$\bigcirc$
		0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
	3	3	3	3	3
	4	4	4	4	4
	5	5	5	5	5
	6	6	6	6	6
	7	7	7	7	7
	8	8	8	8	8
	9	9	9	9	9

In a dog breed known as the Mexican Hairless, the "hairless" phenotype is a result of a mutation displaying an autosomal dominant pattern of inheritance. Homozygous recessive individuals (hh) display a "coated" phenotype. Inheriting two copies of the mutation (HH) is lethal during embryonic development.