hey

What is independent assortment?

when 2 traits are inherited independentlly

Complete a dihybrid Punnett square for two plants that are homozygous, yellow and round. (Hint: DdGg x DdGg). What is the resulting phenotype and genotype?

	DG	Dg	dG	dg
DG	DDGG	DDGg	DdGG	DdGg
Dg	DDGg	DDgg	DdGg	Ddgg
dG	DdGG	DdGg	ddGG	ddGg
dg	DdGg	Ddgg	ddGg	ddgg

Genotype: Phenotype:

1 DDGG
2 DDGg
2 DdGG   } 9 yellow,
4 Dd Gg   round

1 DD gg > 3 yellow d
2 Dd gg   wrinkled

1 ddGG
2 ddGg   > 3 green d
               round

1 dd gg   1 green d
               wrinkled

What proportion of my plants will be tall, green, and wrinkled? (Hint: trihybrid method, it will be ABc).

A = 3/4
c = 1/4

$$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{4} = \frac{9}{64}$$

What are the criteria for classifying chromosomes as homologous pairs?

- Same size and centromere location

- same gene loci

- biparental inheritance

Answer the following questions using this information:

A scientist completed an experiment and concluded that 276 of her plants were tall and yellow, 73 were tall and green, 70 were dwarf and yellow, and 30 were dwarf and green.

What is your Null hypothesis?

H_0 = This WILL fit mendel's 9:3:3:1 ratio.

What is your alternative hypothesis?

H_a = This will NOT fit mendels 9:3:3:1 ratio.

What is the formula for Chi square?

$$x^2 = \sum \frac{(0-e)^2}{e}$$

Calculate the expected values for each plant.
276 + 73 + 70 + 30 = 449

449 x 9/16 = 252.56

449 x 3/16 = 84.19

449 x 1/16 = 28.06

252.56

84.19

28.06

Calculate the chi value for this problem.

$$9 \quad \frac{(270-252.56)^2}{252.56} = 2.18 \qquad 3 \quad \frac{(70-84.19)^2}{84.19} = 2.39$$

$$3 \quad \frac{(73-84.19)^2}{84.19} = 1.49 \qquad 1 \quad \frac{(30-28.06)^2}{28.06} = 0.13$$

$$x^2 = 6.19 \qquad df = 4-1 = 3$$

Using the probability table, find the P value.

$$P = 0.10$$

Using this value, what can you conclude about this problem?

since $P > 0.10$ we fail to reject the H_0

What is the mode of inheritance for this pedigree? Label everyone with their expected genotype.

(b) Autosomal Dominant Trait

Dd   dd

Dd   dd   dd   dd   Dd   dd   Dd

dd   Dd   Dd   dd   Dd   dd   Dd   dd   Dd   dd   Dd

DD