



GRADE 12

Lesson 1: Mendelian genetics

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Grade 12 adv term 1 revision Lesson 1: Mendelian genetics



1. What did Mendel call the two kinds of traits exhibited by the pea plants (one coming from the father, one from the mother)?
 - a) Alleles
 - b) Quadrants
 - c) Genesis
 - d) Elective traits

2. What do we call the result of the genotype (for example, the color of the peas)?
 - a) Genotype 2
 - b) Visible traits
 - c) Physiotrait
 - d) Phenotype

Grade 12 adv term 1 revision Lesson 1: Mendelian genetics

3.



If green is dominant over purple, then what is the genotype for this individual?

a) Purple

b) GG

c) Green

d) gg

4. Another word for homozygous is...

a) purebred

b) hybrid

c) heterozygous

d) dominant

5. Tt is-

- | | |
|-------------------------|------------------|
| a) homozygous recessive | b) none of these |
| c) homozygous dominant | d) heterozygous |

6. If a pea plant were homozygous recessive for height, how would its alleles be represented?

- | | |
|-------|-------|
| a) TT | b) tT |
| c) tt | d) Tt |

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9. Which of the following best describes a GENOTYPE?

a) The physical expression of a trait.

b) The allele/genetic makeup of an organism

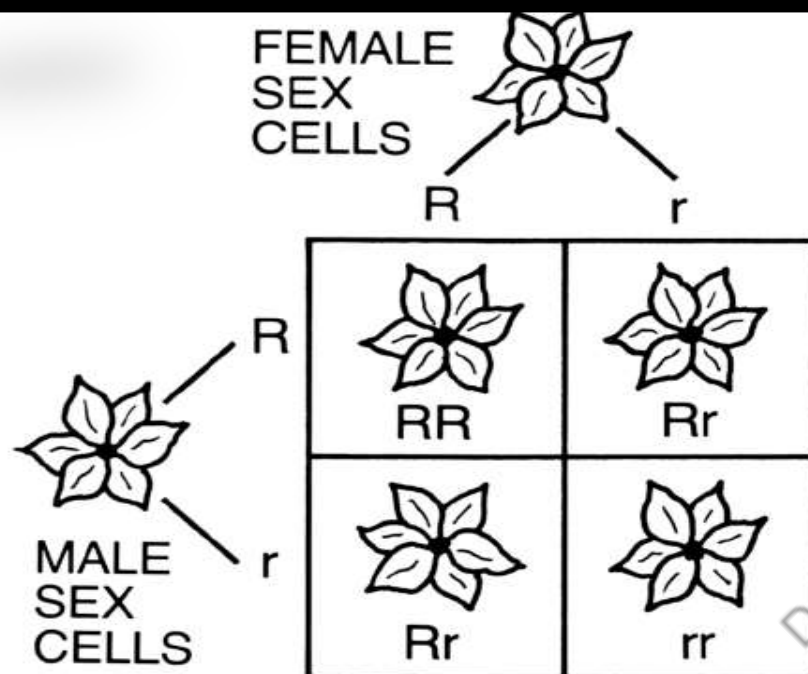
10. Which of the following is an example of a heterozygous genotype?

a) rr

b) Rr

c) RR

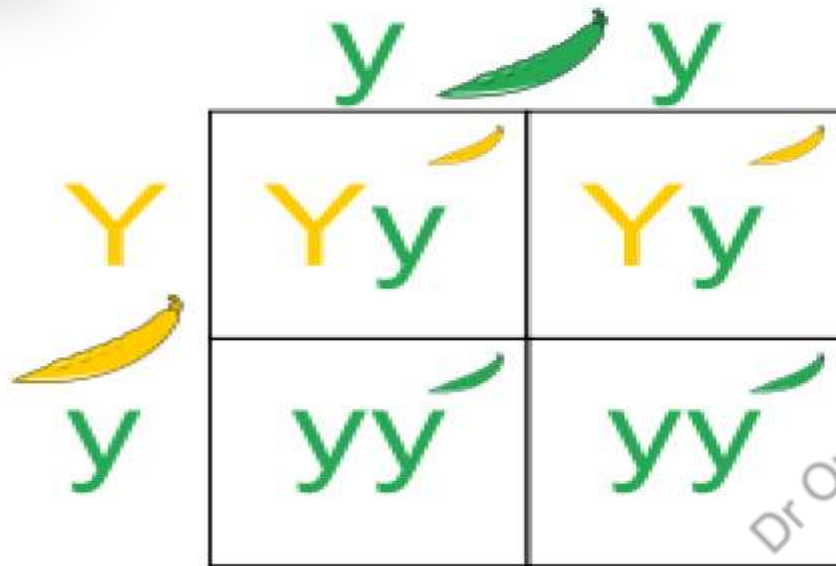
11.



The letters on the TOP AND SIDE of a punnett square represent _____.

- a) The combination of alleles in offspring.
- b) The results of genetic mutations in offspring.
- c) The genotype and phenotype of offspring.
- d) The possible alleles given by the parents following meiosis.

Grade 12 adv term 1 revision Lesson 1: Mendelian genetics



What is the predicted percentage of homozygous recessive offspring in this cross?

- a) 0%
- b) 50%
- c) 75%
- d) 25%

Grade 12 adv term 1 revision Lesson 1: Mendelian genetics

15.

	A	a
A	 AA	 Aa
a	 Aa	 aa

The dominant trait in this punnett square is

- a) yellow pea seeds
- b) there is no dominant seed
- c) green pea seeds



Grade 12 adv term 1 revision Lesson 1: Mendelian genetics



16. Two brown eyed parents (Bb) have a baby. What is the chance the baby is blue eyed?

a) 50%

b) 75%

c) 25%

d) 0 %

3.



In humans, blue eyes are a recessive trait. What genotype would a blue eyed child have?

a) bb

b) Bb

c) None of the above, brown eyes are dominant.

d) BB

Grade 12 adv term 1 revision Lesson 1: Mendelian genetics

4.

	<i>T</i>	<i>t</i>
<i>T</i>		
<i>t</i>		

In pea plants, tall (T) plant alleles are dominant to short (t) plant alleles. If two tall plants (each with the genotype Tt) are crossed, what is the probability that the cross would result in a short pea plant?

- a) 25%
 - b) 50%
 - c) 75%
 - d) 100%
5. Genes determine the characteristics, or __?__, that an individual can have.
- a) cells
 - b) traits
 - c) genetics
 - d) chromosomes

20.

		mother (RrYy) 			
		RY	Ry	rY	ry
father (RrYy) 	RY	 RRYY	 RRYy	 RrYY	 RrYy
	Ry	 RRYy	 RRyy	 RrYy	 Rryy
	rY	 RrYY	 RrYy	 rrYY	 rrYy
	ry	 RrYy	 Rryy	 rrYy	 rryy

Based off this punnett square, what fraction of the offspring will have wrinkled, yellow seeds?

a) 3/16

b) 16/16

c) 1/16

d) 9/16