

نموذج اختبار تجريبي Exam Mock منهج انسابير



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ← المناهج الإماراتية ← الصف الثاني عشر المتقدم ← علوم ← الفصل الأول ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 2025-11-27 18:33:13

ملفات اكتب للمعلم اكتب للطالب | اختبارات الكترونية | اختبارات | حلول | عروض بوربوينت | أوراق عمل
منهج انجليزي | ملخصات وتقارير | مذكرات وبنوك | الامتحان النهائي | للمدرس

المزيد من مادة
علوم:

التواصل الاجتماعي بحسب الصف الثاني عشر المتقدم



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

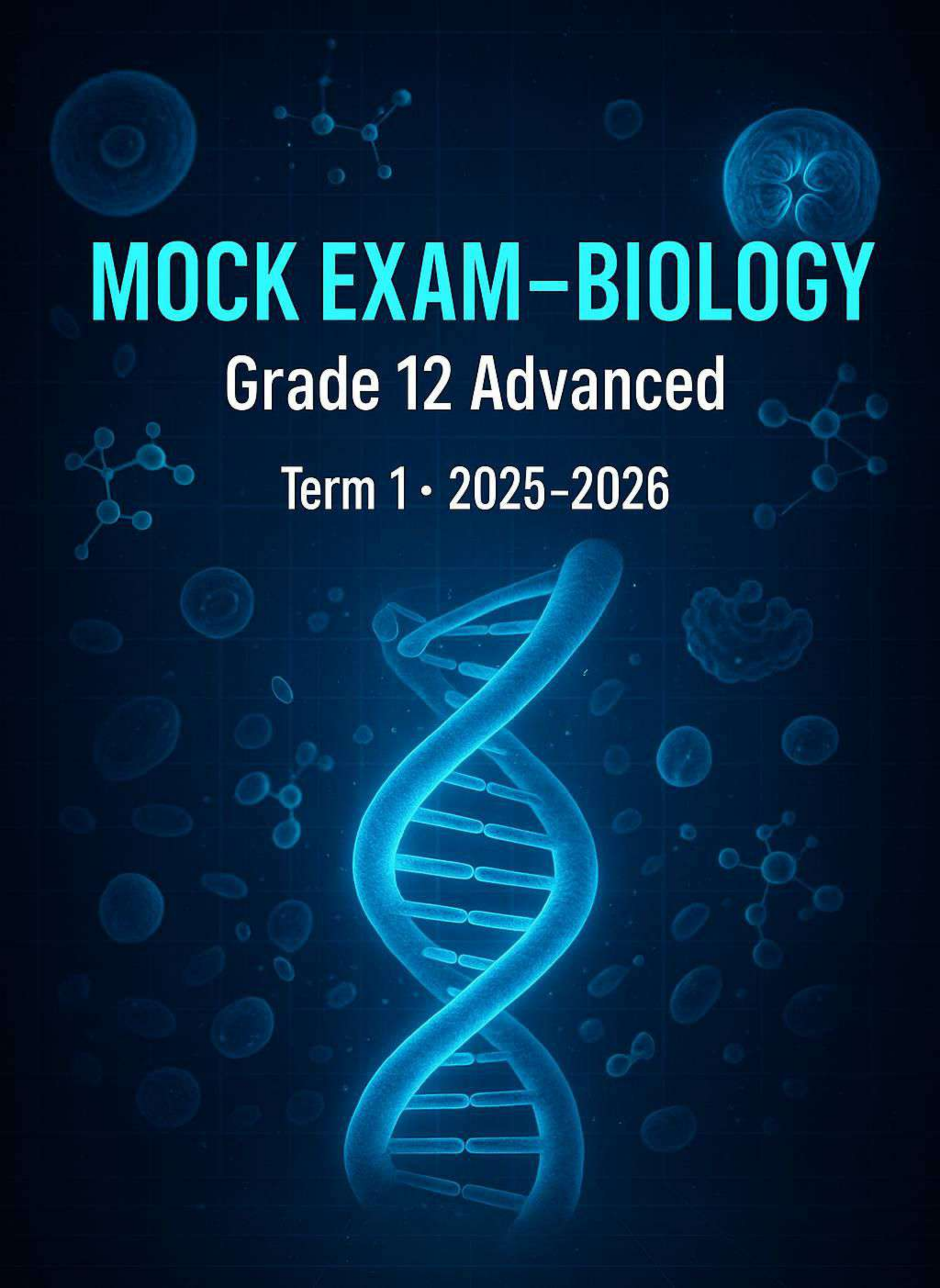
اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف الثاني عشر المتقدم والمادة علوم في الفصل الأول

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The background is a dark blue grid with various biological illustrations in a lighter blue color. These include several spherical cells with internal structures, molecular models with atoms and bonds, and a large DNA double helix structure in the center.

MOCK EXAM-BIOLOGY

Grade 12 Advanced

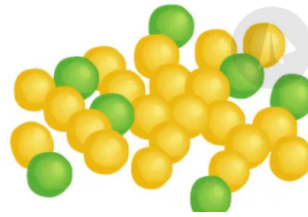
Term 1 • 2025-2026



The figure below represents the offspring of two pea plants.

Which is the ratio of pea plant offspring that show dominant yellow seeds but carry one recessive gene if both parents are hybrids?

- a) 25%
- b) 50%
- c) 75%
- d) 100%



A cross was made between a brown-eyed rabbit and a blue-eyed rabbit.

All F_1 offspring had brown eyes.

When these F_1 rabbits were interbred, the phenotypic ratio among the F_2 generation was 3 brown-eyed : 1 blue-eyed.

What can you conclude about the inheritance of the brown-eye trait?

- A. The brown-eye trait is controlled by a dominant allele.
- B. The blue-eye trait is codominant with brown.
- C. The brown-eye trait is recessive to blue.
- D. The trait shows incomplete dominance.



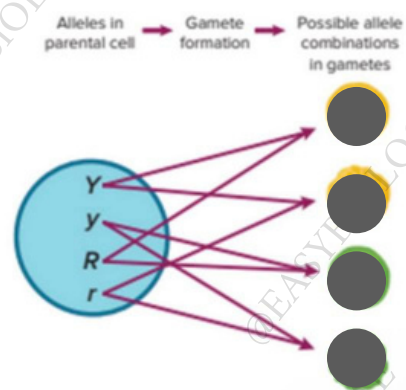
Which of the following statements correctly describes the difference between a purebred and a hybrid organism?

- a. A purebred has two different alleles, while a hybrid has identical alleles.
- b. A hybrid has two identical alleles, while a purebred has different alleles.
- c. A purebred has identical alleles, while a hybrid has different alleles.
- d. Both have identical alleles for every trait.

The diagram below shows the possible gametes produced by a pea plant with the genotype $YyRr$.

Which of the following cannot be a possible gamete formed by this plant?

- a. YR
- b. Yr
- c. yR
- d. YY





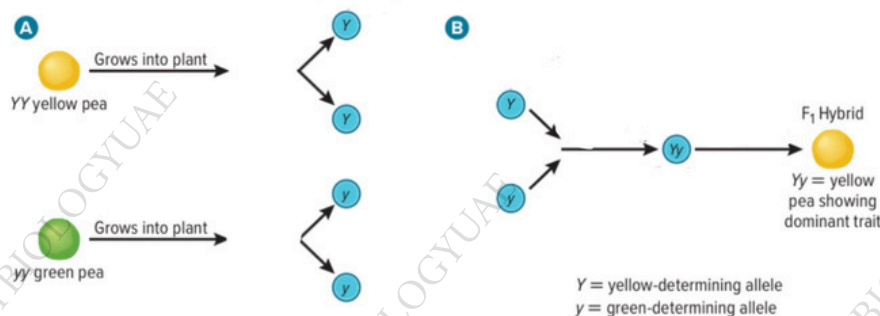
Two heterozygous parents for freckles ($Ff \times Ff$) were crossed. Freckles appear in individuals with at least one dominant allele (F). Which of the following correctly identifies the type of cross, the genetic law, and the expected results?



- a) Monohybrid cross, explained by the law of dominance, producing a genotypic ratio of $1 FF : 1 Ff : 2 ff$ and a phenotypic ratio of 1 with freckles : 1 without freckles.
- b) Dihybrid cross, explained by the law of segregation, producing a genotypic ratio of $1:2:1$ and a phenotypic ratio of $3:1$.
- c) Monohybrid cross, explained by the law of independent assortment, producing a genotypic ratio of $9:3:3:1$ and a phenotypic ratio of 3 with freckles : 1 without freckles.
- d) Dihybrid cross, explained by the law of independent assortment, producing a genotypic ratio of $9:3:3:1$ and a phenotypic ratio of 9 with freckles : 3 without freckles : 3 carriers : 1 none.
- e) Monohybrid cross, explained by the law of segregation, producing a genotypic ratio of $1 FF : 2 Ff : 1 ff$ and a phenotypic ratio of 3 with freckles : 1 without freckles.

In the diagram shown, part A and part B represent stages in pea plant reproduction. What do A and B represent, which law is demonstrated, and what type of cross is this?

- a) A: Gamete formation, B: Fertilization, Law of Segregation, Monohybrid cross
- b) A: Mutation, B: Selection, Law of Dominance, Dihybrid cross
- c) A: Independent assortment, B: Fusion, Law of Independent Assortment, Dihybrid cross
- d) A: Gamete formation, B: Fertilization, Law of Independent Assortment, Monohybrid cross





In mice, black fur (B) is completely dominant over white fur (b).

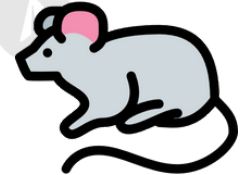
A black male mouse of unknown genotype is crossed with a white female mouse.

All 8 offspring are black.

One of these black offspring is then crossed with a white mouse and produces both black and white offspring.

What are the most likely genotypes of:

1. the original black male mouse, and
2. the black F₁ offspring used in the second cross?



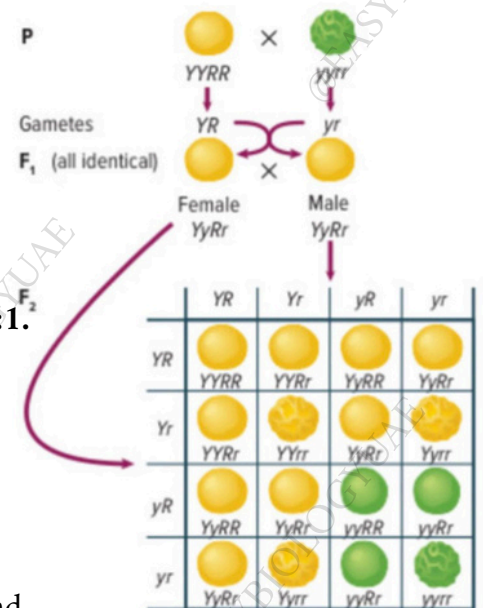
- a) BB and BB
- b) BB and Bb
- c) Bb and Bb
- d) Bb and bb

The diagram shows a cross between pea plants with two contrasting traits:

- Seed color: Yellow (Y) is dominant over green (y)
- Seed shape: Round (R) is dominant over wrinkled (r)

In the F₂ generation, four phenotypes appeared in the ratio 9:3:3:1. Based on this result, which of the following best explains what happens during gamete formation in the F₁ plants?

- a) The alleles for seed color and seed shape remain linked and move together into the same gamete.
- b) Each pair of alleles separates independently, allowing YR, Yr, yR, and yr gametes to form.
- c) Dominant alleles for color and shape always pair together to form the yellow-round phenotype.
- d) Only homozygous plants can produce all four gamete types.
- e) The ratio 9:3:3:1 proves that the two traits are controlled by a single gene with four alleles.





The figure shows a dihybrid cross between pea plants:

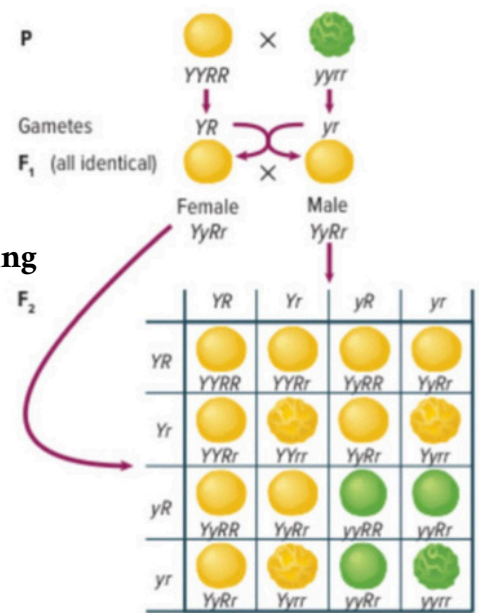
P: YYRR $\times$ yyrr

F₁: YyRr

Then two F₁ plants are crossed: YyRr $\times$ YyRr.

Using the Punnett square shown, how many of the F₂ offspring have the same phenotype as the F₁ plants?

- A. 3
- B. 4
- C. 9
- D. 16



A plant species has 8 pairs of chromosomes.

The number of different gamete combinations produced only by independent assortment can be calculated using:

- A. $2Xn$
- B. 2^n
- C. n^2
- D. $2n^2$



Which statement best describes the role of crossing over in genetic recombination?

- A. It decreases genetic variation by producing identical gametes
- B. It increases genetic variation by exchanging gene segments between homologous chromosomes
- C. It prevents independent assortment from occurring
- D. It produces the same combinations predicted by 2^n

Which of the following best represents total genetic recombination in sexually reproducing organisms?

- A. Only 2^n
- B. Only crossing over
- C. 2^n for independent assortment plus additional variation from crossing over
- D. $2n^2$ due to gene mutation

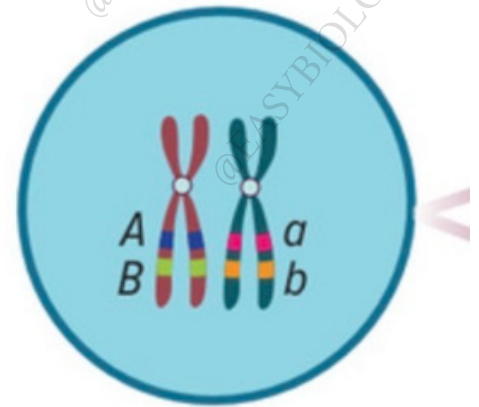


The diagram shows linked genes located close together on the same chromosome.

During meiosis, no crossing over occurs.

Which gametes are expected to be produced in the highest proportion?

- A. AB and ab
- B. Ab and aB
- C. AB only
- D. All gametes are recombinant types

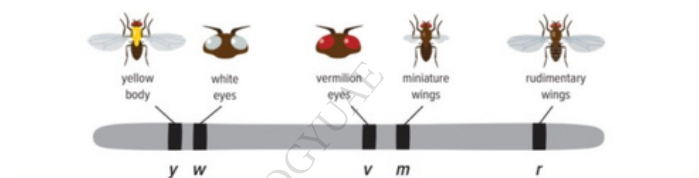


If 8 out of 100 gametes produced were recombinant types such as A b or a B, what is the recombination frequency?

- A. 4%
- B. 8%
- C. 16%
- D. 92%

Based on the chromosome map shown ($y - w - v - m - r$), which two genes have the highest frequency of crossing over?

- A. y and w
- B. w and v
- C. v and m
- D. y and r



Which two genes are expected to show the lowest recombination frequency?

- A. y and v
- B. v and r
- C. w and v
- D. m and r



Farmers often prefer polyploid plants because:

- A. They produce smaller but faster-growing fruits
- B. They have reduced genetic material leading to fewer mutations
- C. They often have larger size and increased vigor due to extra chromosome sets
- D. Polyploidy makes plants sterile and reduces yield

A human embryo is found to have 3 complete sets of chromosomes. What is the most likely outcome?

- A. Normal growth and development
- B. Increased size and stronger traits
- C. Death early in development
- D. Formation of cancer cells only

Which of the following organisms is correctly identified as polyploid?

- A. Dog
- B. Baby
- C. Bread wheat
- D. Hen

What is a primary goal of selective breeding in dogs?

- A. Allowing animals to adapt naturally without human interference
- B. Increasing desired traits such as strength, endurance, or trainability
- C. Producing more genetic mutations for variation
- D. Reducing all behavioral traits for easier control

A plant breeder crosses tomato plants to combine disease resistance and fast growth, but producing hybrid rice with high yield required three decades.

Which conclusion is most accurate?

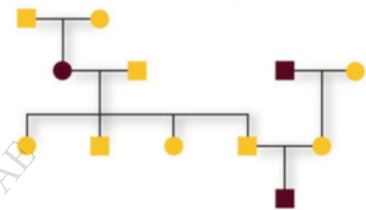
- A. Hybrid tomato plants show a disadvantage because they take many years to produce
- B. Hybrid rice plants show an advantage because they inherit both desirable traits immediately
- C. Hybrid tomato plants demonstrate benefits of hybridization, while hybrid rice shows that the process can be time-consuming and costly
- D. Both tomato and rice hybrids show only disadvantages



Which animal has been inbred to maintain high trainability so it can be used in special service work?

- A. Saint Bernard
- B. Husky
- C. German Shepherd
- D. Angus cattle

Based on the pedigree diagram below (dark shapes = affected), which of the following statements is most consistent with the mode of inheritance?



- A. Affected individuals must have at least one affected parent
- B. The trait can skip generations and unaffected parents can have affected children
- C. All affected individuals are male, so the trait is X-linked
- D. Each affected parent must pass the trait to every child

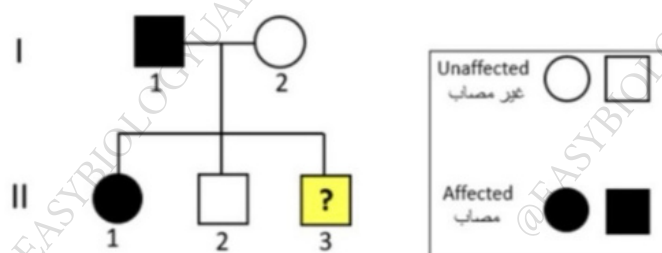
A woman has Achondroplasia and her husband is average-sized. They have a 50% chance of having a child with Achondroplasia because:

- A. She must be Aa (heterozygous affected)
- B. She must be aa (homozygous recessive)
- C. The trait is sex-linked dominant
- D. Only males can inherit the trait

Which of the following statements is true about both Huntington's disease and Achondroplasia?

- A. Symptoms appear only in childhood
- B. They require two defective recessive alleles to appear
- C. One defective dominant allele is enough to cause the disorder
- D. The disorder skips generations frequently

The pedigree below represents an autosomal dominant disorder. Individual I-1 is affected (Aa), and individual I-2 is unaffected (aa). What is the probability that individual II-3 (yellow) will be affected by the disorder?



- A. 0%
- B. 25%
- C. 50%
- D. 100%