Select the correct answer.

What is the name of the process which makes one of the two X chromosomes in female mammals inactive?

ATTEMPT 1

- DNA inactivation
- epistasis

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- dosage compensation ✓
- transcription

Select the correct answer.

What do you think is the **most likely** reason the cell cannot use the genetic material in a Barr body?

ATTEMPT 1

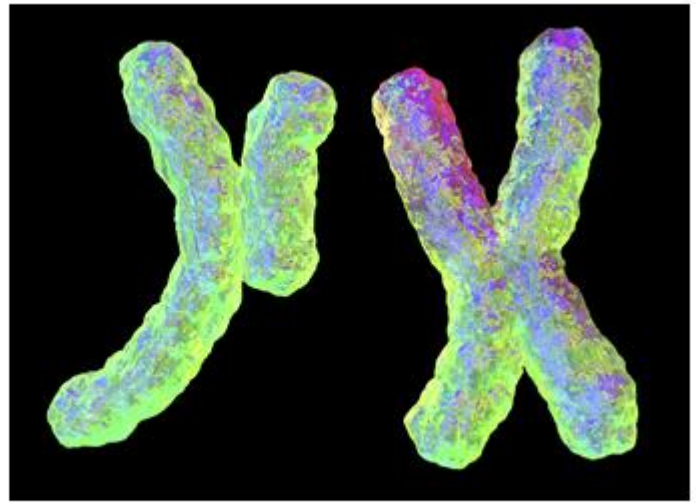
- ○ The condensed DNA has no access to biochemical processes. ✓
- ◉ The DNA escapes out of the nucleus and is no longer available. ✗

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- ◉ The DNA dissolves and is therefore no longer available. ✗
- ◉ The DNA is converted into another molecule. ✗

Select the correct answer.

Which of the following statements is true about X and Y chromosomes?



ATTEMPT 1

- They are always found as a homologous pair in body cells.
- They exist as XX and XY in female and male gametes, respectively.
- Since they are sex chromosomes, they only exist in gametes but not body cells.
- (selected) The X chromosome has more genes than the Y chromosome. ✓

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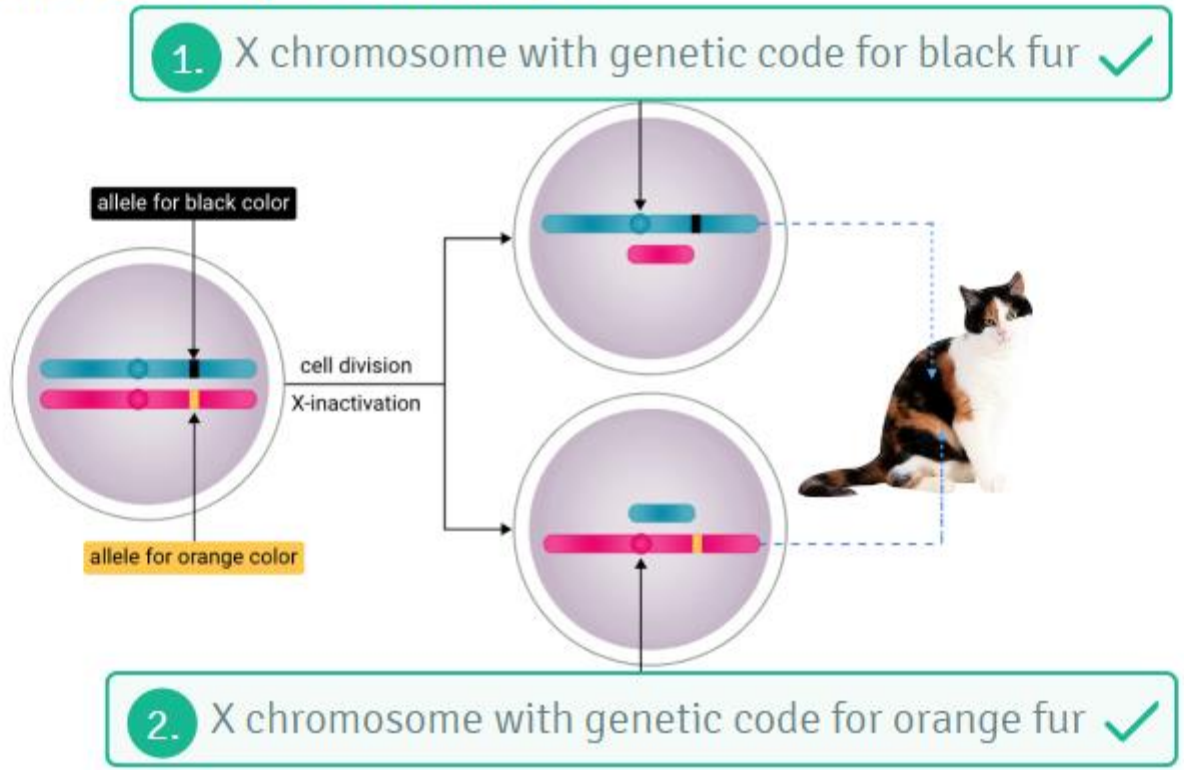
Select the correct answer from the drop-down menu.

Humans have 46 chromosomes that can be arranged in 23 pairs. One pair determines gender, while the other 22 pairs are called 1. autosomes ✓ .

1. autosomes ✓

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Drag and drop the terms to correctly label the image.



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X chromosome with genetic code for white fur

inactive X chromosome

Y chromosome with genetic code for black fur

Select the correct answers.

Which of the following statements are **true** about the X and Y chromosomes?

ATTEMPT 1

- [ ] A sperm cell has an X and a Y chromosome.
- [x] They each have a different set of genes. ✓
- [x] Their centromeres are in different locations. ✓
- [ ] An egg cell has two X chromosomes.

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- [ ] They have the same set of genes but in different locations.
- [ ] They have the same number of genes.

Select the correct answer from the drop-down menu.

1. Chromosomes ✓ are DNA strands tightly coiled around proteins.

1. Chromosomes ✓

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Select the best answer from the drop-down menu.

The process of X-inactivation happens in the cells of the 1. gamete ✗ which then divide through mitosis to make up the whole organism.

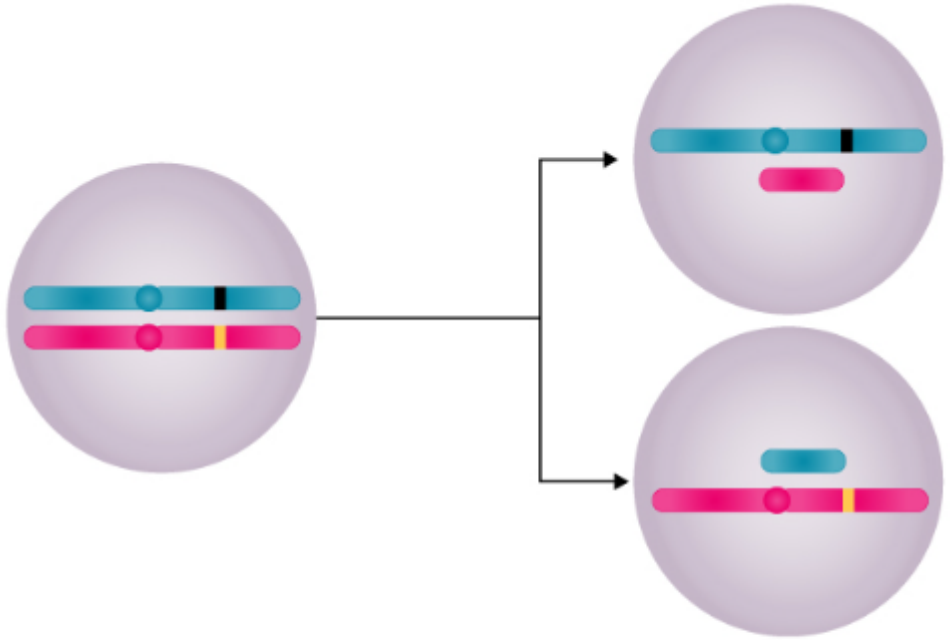
1. gamete ✗

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early embryo ✓

Select the best answer from the drop-down menus.

After 1. fertilization ✓, the female zygote will have two copies of the X chromosome. At the early stages of embryo development, cell division occurs, and 2. X-inactivation ✓ occurs in each cell randomly, resulting in some cells having an inactive X chromosome inherited from their mother and others from their father.



1. fertilization ✓

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2. X-inactivation ✓