

Sexual versus Asexual Reproduction

Name: _____

Date: _____

1. The female of a certain species of fish releases several thousand eggs during reproduction. Based on this information, it would be reasonable to assume that this species
 - A. provides a protective shell for the egg
 - B. provides considerable parental care for its eggs
 - C. has internal fertilization of the egg
 - D. has a low survival rate for its eggs

2. What is one advantage of sexual reproduction?
 - A. The offspring are identical to the parents
 - B. The offspring are resistant to viruses.
 - C. The offspring are born live, rather than from eggs.
 - D. The offspring inherit a wider variety of genetic information.

3. Which of the following is the *primary* advantage of sexual reproduction when compared to asexual reproduction?
 - A. There is a greater number of offspring.
 - B. There is more food available to offspring.
 - C. There is greater genetic variety in offspring.
 - D. There is a longer development time for offspring.

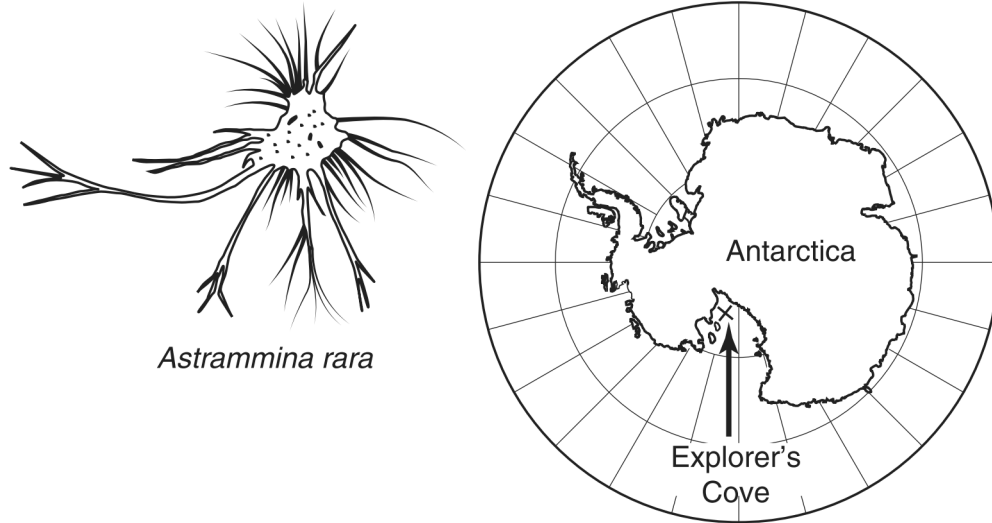
4. Roses produced asexually from cuttings are genetically identical to the parent. Roses grown from sexually produced seeds may look different from either parent.

Which statement is *best* supported by this information?

- A. Sexually produced plants are a new species.
- B. Sexual reproduction produces more variation in plants.
- C. Asexually produced plants are larger than sexually produced plants.
- D. Asexual reproduction helps plants adapt to different environments.

5. Use the information and diagrams below to answer the following question(s).

Astrammmina rara is a unicellular organism that is several millimeters long. This organism lives on the ocean floor of Antarctica in an area called Explorer's Cove. *Astrammmina rara* builds a shell by cementing grains of sand from the ocean floor together. The organism either absorbs nutrients from the water or eats other organisms on the ocean floor. The offspring of *Astrammmina rara* have genes identical to the parent. Below is a diagram of an *Astrammmina rara* and a map showing where the organism lives.



Asexual reproduction by *Astrammmina rara*

- A. involves an egg and a sperm
- B. requires a male and a female
- C. reduces the variation in the offspring
- D. increases the variation in the offspring

6. Sea stars are genetically different from each other and from their parents.

These genetic differences are the result of

- A. mitosis
- B. cloning
- C. sexual reproduction
- D. asexual reproduction

7. During sexual reproduction, a sperm cell fertilizes an egg cell to form a fertilized egg. The fertilized egg then develops into a new organism.

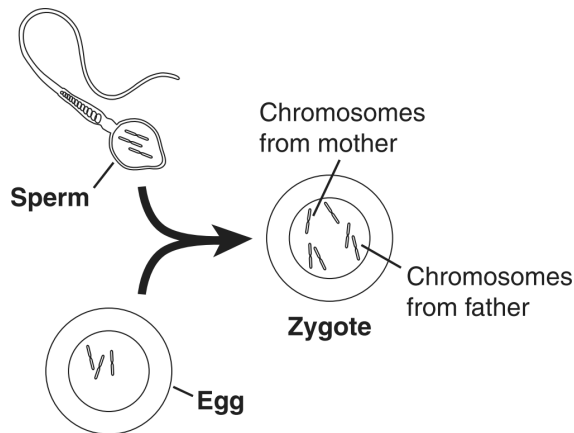
Which statement describes the primary advantage of sexual reproduction over asexual reproduction?

- A. Sexual reproduction produces identical offspring.
- B. Sexual reproduction results in less adaptable offspring.
- C. Sexual reproduction generates a large number of offspring.
- D. Sexual reproduction results in genetic variation in offspring.

8. During which process does genetic material come from two parents?

- A. asexual reproduction
- B. photosynthesis
- C. respiration
- D. sexual reproduction

9. The diagram below shows the formation of a zygote from an egg and a sperm. Chromosomes carry genetic information.



Which reproduction concept does the diagram show?

- A. All the genetic information in a zygote is from one parent.
- B. All the genetic information in sperm is from both parents.
- C. Fertilization ensures that traits are inherited from both parents.
- D. Fertilization results in a reduced number of chromosomes.
10. Which statement *best* describes the importance of sexual reproduction?
- A. Sexual reproduction produces offspring that are identical.
- B. Sexual reproduction produces variation among offspring.
- C. Sexual reproduction provides for the regeneration of body parts in some species.
- D. Sexual reproduction occurs between individuals of the same species.

11. Which statement describes the effect of sorting and recombination of genes in sexual reproduction?
- A. Most offspring receive the same set of genes.
- B. Most offspring receive only dominant genes.
- C. Most offspring receive a unique combination of genes.
- D. Most offspring receive only recessive genes.
12. Which process allows for an organism to increase the number of body cells during development?
- A. budding B. conjugation
- C. meiosis D. mitosis
13. What process produces offspring from only one parent organism?
- A. Fertilization
- B. Germination
- C. Sexual reproduction
- D. Asexual reproduction

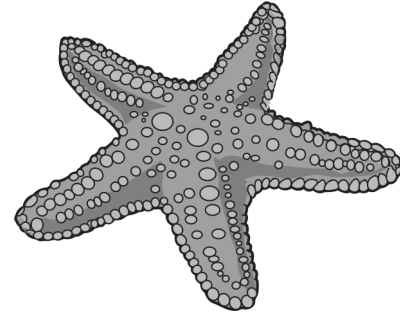
14. Which of these is an example of sexual reproduction?

- A. Production of seeds in flowers
- B. Vegetative propagation in leaves
- C. Fruiting in fungi
- D. Budding in yeast

15. Which statement describes asexual and sexual reproduction?

- A. Asexual is one part of sexual reproduction.
- B. Sexual reproduction happens before asexual.
- C. Asexual needs one parent, and sexual needs two parents.
- D. Sexual happens only in animals, and asexual happens only in plants.

16. The following picture shows a sea star.



Two new sea stars can be produced by dividing one sea star in half.

Which type of reproduction is described above?

- A. Sexual
- B. Cloning
- C. Asexual
- D. External

17. Which of the following is true of asexual reproduction?

- A. It requires seeds.
- B. It requires flowers.
- C. It requires only one parent.
- D. It requires sperm and eggs.

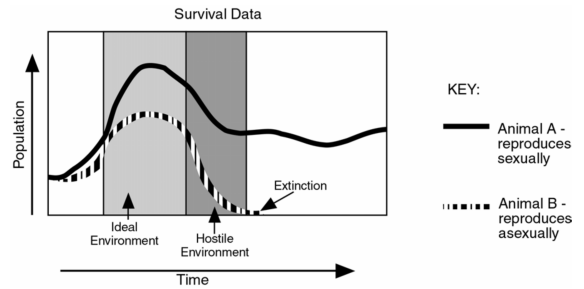
18. The spider plant reproduces asexually. The runners, which are similar to roots, grow from the parent plant. Other plants grow from these runners. Which of the following statements is true about a plant that is asexual?

- A. The DNA of the new plant is a new unique strand of DNA.
- B. The DNA of the new plant is a blend of the parent plant's DNA.
- C. The DNA of the new plant is the same as the DNA of the parent plant.
- D. The DNA of the new plant is different from the DNA of the parent plant.

19. Bacteria cells reproduce by binary fission, a type of asexual cell division. One advantage of binary fission is—

- A. greater genetic variation in daughter cells.
- B. the ability to reproduce quickly.
- C. greater resistance to disease.
- D. the ability to live under anaerobic conditions.

20.



According to the graph, one reason that more of the Animal A population survived is because sexual reproduction produces—

- A. individual variation within a population.
- B. larger numbers of viable offspring.
- C. more female individuals than male.
- D. different forms for each generation.

21. Sexual reproduction provides for what to occur?

- A. cloning
- B. budding
- C. genetic stability
- D. genetic variation

22. What is the *primary* cause of variation in the offspring of sexually reproducing organisms?

- A. cytoplasmic division
- B. environmental changes
- C. mutation
- D. recombination of alleles

23. What advantage do sexually reproducing organisms have over asexually reproducing organisms?

- A. genetic variation
- B. genetic stability
- C. increased fertilization rate
- D. increased reproductive rate

24. What process *best* explains how a nerve cell and a muscle cell can both develop from the same fertilized egg?

- A. differentiation
- B. natural selection
- C. selective breeding
- D. genetic engineering

25. Why is meiosis important for sexual reproduction?

- A. It allows the zygote formed from fertilization to have triple the chromosome number of the organism.
- B. It allows gametes to have twice the original number of chromosomes of the organism.
- C. It allows gametes to have half the original number of chromosomes of the organism.
- D. It allows the zygote formed from fertilization to have half the original number of chromosomes of the organism.

26. Which process produces the *most* variation within a species?

- A. asexual reproduction
- B. sexual reproduction
- C. mitosis
- D. cloning

27. How are sexual reproduction and asexual reproduction different?

- A. Sexual reproduction produces offspring identical to the parents, but asexual reproduction produces offspring with traits from both parents.
- B. Asexual reproduction produces offspring identical to the parents, but sexual reproduction produces offspring with traits from both parents.
- C. Sexual reproduction only occurs in multicellular organisms, but asexual reproduction only occurs in unicellular organisms.
- D. Asexual reproduction only occurs in multicellular organisms, but sexual reproduction only occurs in unicellular organisms.

28. Which characteristic is present in offspring produced by sexual reproduction, but is missing in offspring produced by asexual reproduction?

- A. an identical copy of parent chromosomes
- B. twice the number of parent chromosomes
- C. only half the number of parent chromosomes
- D. an independent assortment of parent chromosomes

29. How are sexual reproduction and asexual reproduction different?

- A. Sexual produces offspring identical to the parents, while asexual produces offspring with traits from both parents.
- B. Sexual produces offspring with traits from both parents, while asexual produces offspring identical to the parents.
- C. Sexual only occurs in multicellular organisms, while asexual only occurs in unicellular organisms.

30. Aphids are a common plant-pest insect. They alternate between asexual and sexual reproduction. During the summer, aphid populations grow quickly by asexual reproduction. As winter approaches, aphids switch to sexual reproduction.

What advantage does the switch to sexual reproduction give the aphids?

- A. Sexual reproduction maintains a constant level of variation in the population and requires less energy.
- B. Sexual reproduction decreases variation in the population and prevents the spread of harmful mutations.
- C. Sexual reproduction increases variation in the population and provides for adaptability in a changing environment.
- D. Sexual reproduction produces individuals that are clones and allows rapid population growth under stable environmental conditions.

31. Many plants reproduce asexually. How does the genetic material (DNA) compare between the new plant and the parent plant in this type of reproduction?

- A. It is similar but not identical.
- B. It depends on the plant the parent is crossed with.
- C. It depends on the climate it is grown in.
- D. It is identical.

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| 1.
Answer: D
Points: 1 | 15.
Answer: C
Points: 1 |
| 2.
Answer: D
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| 3.
Answer: C
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Answer: B
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Points: 1 |
| 5.
Answer: C
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Answer: B
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| 6.
Answer: C
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Answer: A
Points: 1 |
| 7.
Answer: D
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| 8.
Answer: D
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Answer: D
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| 9.
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Answer: C
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Answer: D
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Answer: B
Points: 1 |
| 14.
Answer: A
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Answer: D
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Answer: B
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30.
Answer: C
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31.
Answer: D
Points: 1