

Seventh Grade Science  
Mitosis & Meiosis and Asexual & Sexual Reproduction Test

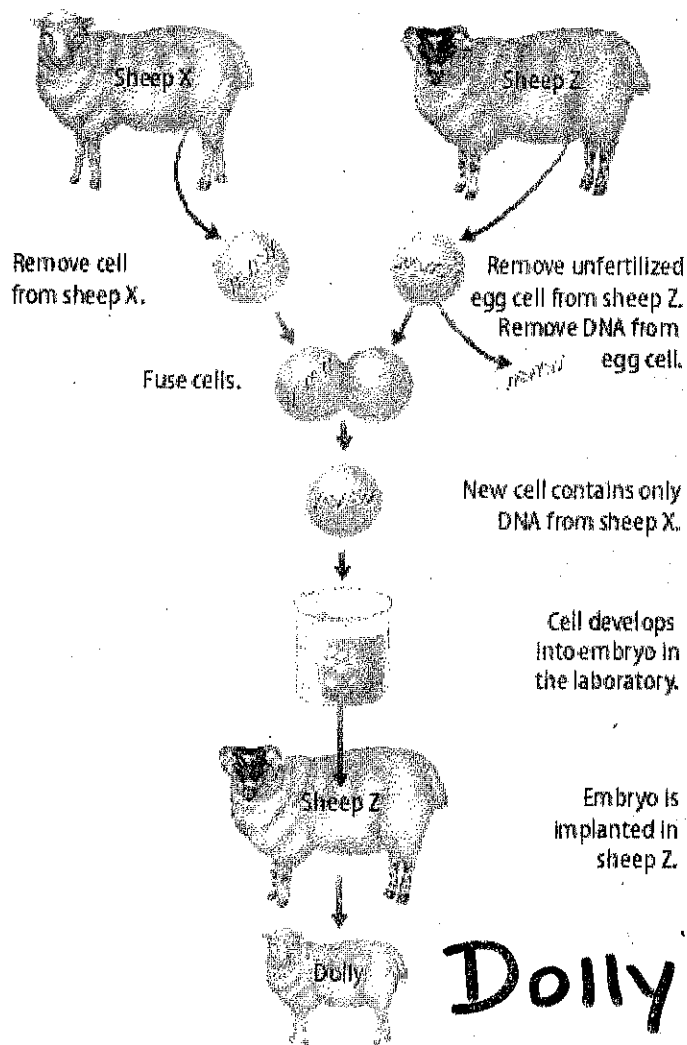
Do NOT WRITE on this Test!

1. The cell that is formed when fertilization occurs is called a \_\_\_\_\_.

- A. ☐ zygote
- B. ☐ mutation
- C. ☐ chromosome
- D. ☐ cytoplasm

Name: \_\_\_\_\_

2. What is the process shown in this figure?

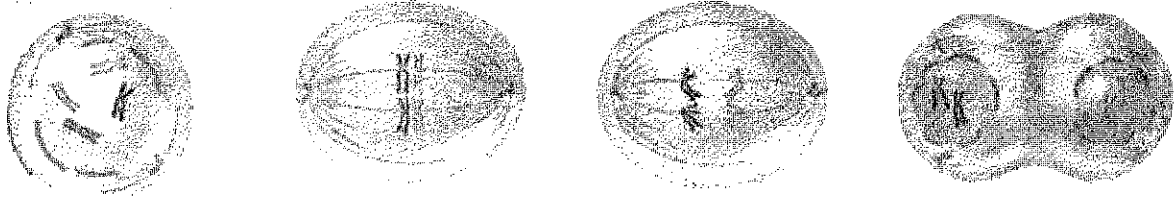


Dolly (1st of her kind!)

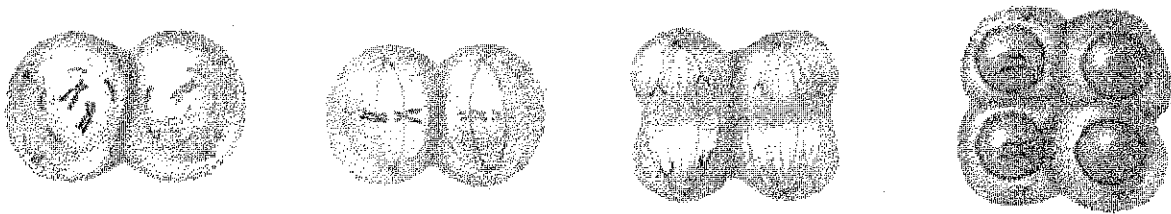
- A. ☐ budding
- B. ☐ cloning
- C. ☐ regeneration
- D. ☐ vegetative reproduction

3. During which phase of meiosis do homologous pairs of chromosomes separate?

### Meiosis I

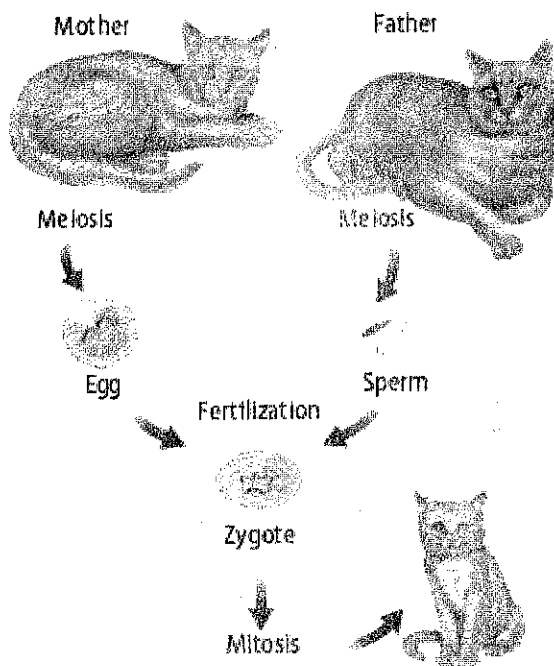


### Meiosis II



- A. ☐ anaphase I
- B. ☐ prophase I
- C. ☐ anaphase II
- D. ☐ telophase II

4. Which conclusion can be drawn from this picture?



- A. ☐ An egg cell and a sperm cell unite to form a zygote.
- B. ☐ Kittens will always look like the father.
- C. ☐ Sperm cells come from the mother.
- D. ☐ Mitosis produces egg and sperm cells.

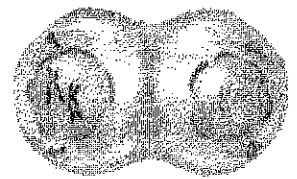
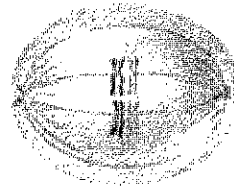
5. A sea star has one of its arms break off. That arm grows into its own separate organism through \_\_\_\_\_.

- A. ☐ sexual reproduction
- B. ☒ regeneration
- C. ☐ spindle fibers
- D. ☐ chromosomes

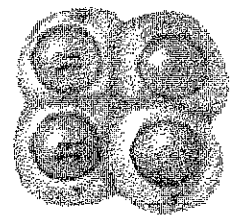
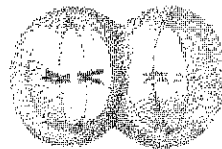
6. During which phase of meiosis do chromosomes condense and thicken?

**Meiosis I**

*are doubled*



**Meiosis II**



- A. ☐ metaphase I
- B. ☐ prophase I
- C. ☐ anaphase II
- D. ☒ metaphase II

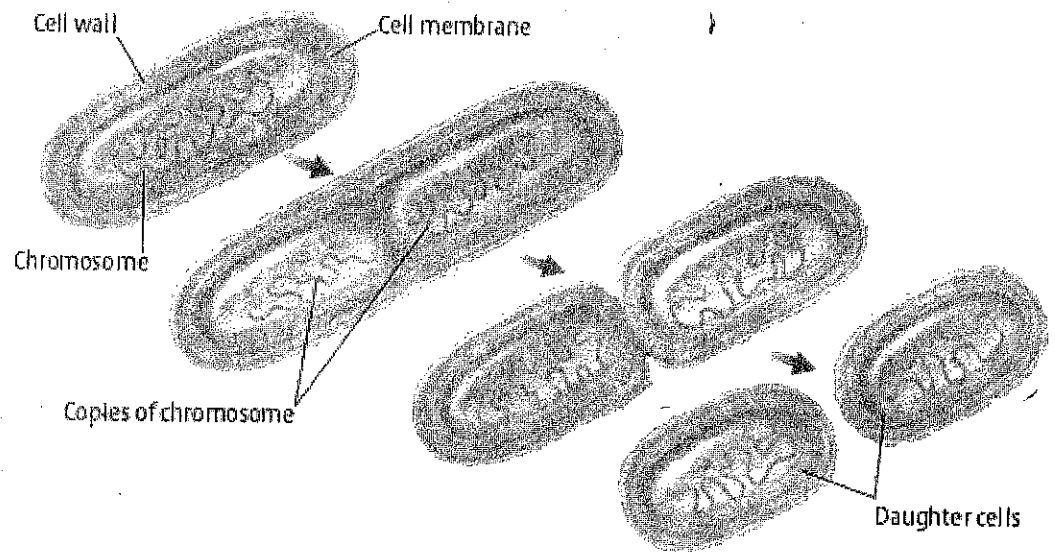
7. In asexual reproduction, offspring are produced \_\_\_\_\_.

- A. ☐ from one parent
- B. ☐ from two parents
- C. ☐ from 46 chromosomes
- D. ☒ from 8 chromosomes

8. The process that produces haploid sex cells is \_\_\_\_\_.

- A. ☐ mitosis
- B. ☐ fission
- C. ☐ meiosis
- D. ☐ interphase

9. If fission takes place every 20 minutes in some bacteria, then starting with one bacterial cell, how many bacterial cells would be produced in three cell divisions or one hour?



- A. ☐ 2
- B. ☐ 4
- C. ☒ 6
- D. ☒ 8

10. Hydra reproduce through \_\_\_\_\_, where the offspring grows from the body of the parent organism.

- A. ☐ budding
- B. ☐ DNA
- C. ☐ thymine
- D. ☐ mutations

11. Human reproduction involves which of the following?

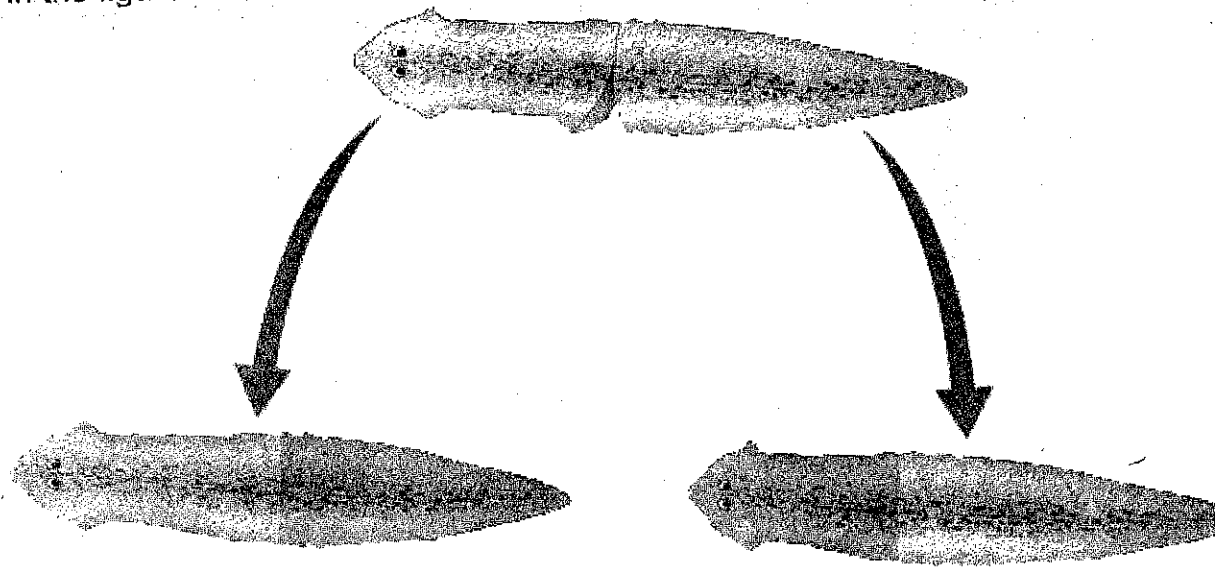
- A. ☐ body cells
- B. ☐ sex cells
- C. ☒ skin cells
- D. ☐ mitochondria

12. Which of these is part of asexual reproduction?

- A. ☒ sperm
- B. ☒ egg
- C. ☐ zygote
- D. ☐ bud

13.

Which of these organisms can perform the same type of reproduction as the one shown in the figure?



- A. ☐ human
- B. ☐ sea stars
- C. ☒ strawberry plants
- D. ☐ sheep

14. What is the mathematical relationship between the number of chromosomes and the number of homologous pairs?

<b>Table 1 Chromosomes of Selected Organisms</b>		
<b>Organism</b>	<b>Number of Chromosomes</b>	<b>Number of Homologous Pairs</b>
Fruit fly	8	4
Rice	24	12
Yeast	32	16
Cat	38	19
Human	46	23
Dog	78	39
Fern	1,260	630

- A. ☒ There is no mathematical relationship between the number of chromosomes and the number of homologous pairs.
- B. ☐ The number of chromosomes is related directly to the age of the organism, so the number of homologous pairs changes.
- C. ☐ There is only one chromosome in each homologous pair.
- D. ☐ There are one half as many homologous pairs as there are chromosomes.

15. If a diploid tomato cell has 24 chromosomes, how many chromosomes will the tomato's sex cells have?

A. ☐ 12

B. ☐ 6

C. ☐ 24

D. ☐ 48

16. List the 4 phases of Mitosis in correct order:

a. \_\_\_\_\_

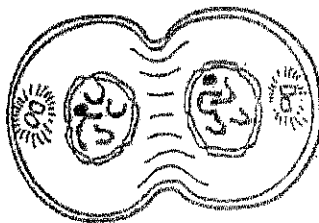
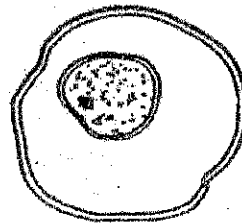
b. \_\_\_\_\_

c. \_\_\_\_\_

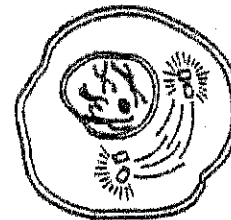
d. \_\_\_\_\_

NAME THE STAGES OF MITOSIS !

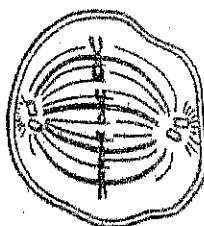
INTERPHASE-->



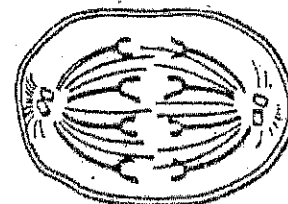
17 \_\_\_\_\_



12 \_\_\_\_\_



18 \_\_\_\_\_



20 \_\_\_\_\_

21. \_\_\_\_\_ What types of cells are no longer undergoing cell division in your body?

- a. skin cells      b. brain cells      c. red blood cells      d. sex cells

22. \_\_\_\_\_ How many chromosomes are in the body cells of an organism that has a haploid number of 8?

- a. 4      c. 12  
b. 8      d. 16

23. \_\_\_\_\_ The diploid number of chromosomes in a human skin cell is 46. The number of chromosomes found in a human egg cell is

- a. 46.      c. 23.  
b. 92.      d. 12.5.

24. \_\_\_\_\_ What is the end result from one cell going through cell division: \_\_\_\_\_

- a. two identical cells      c. four new cells  
b. Two different cells      d. four identical cells

25. \_\_\_\_\_ What does the word Mitosis mean:

- a. division of the cytoplasm      c. division of the DNA  
b. division of the nucleus      d. cell division

26. \_\_\_\_\_ How many chromosomes do your body cells have before mitosis begins?

- a. 23      b. 50      c. 46      d. 21

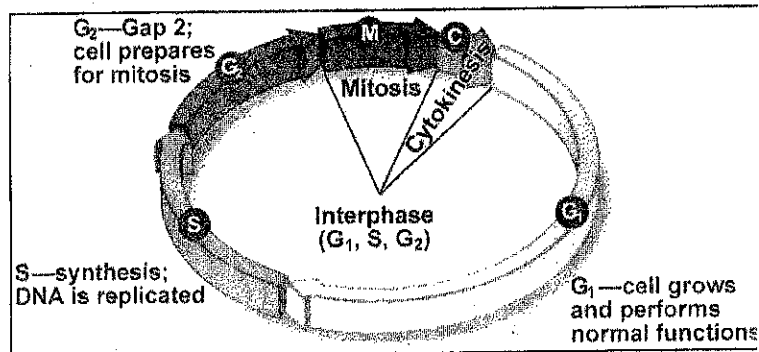
27. \_\_\_\_\_ Gametes are produced by the process of

- a. mitosis.      c. crossing-over.  
b. meiosis.      d. replication.

28. \_\_\_\_\_ The division of the nucleus is called?

29. \_\_\_\_\_ The division of the cytoplasm is called?

30. \_\_\_\_\_ What happens to the cell during interphase?



31. Explain what happens during each of the 3 stages of interphase ( $G_1$ , S,  $G_2$ )

- a.  $G_1$  = \_\_\_\_\_  
b. S = \_\_\_\_\_  
c.  $G_2$  = \_\_\_\_\_

28. \_\_\_\_\_

29. \_\_\_\_\_

30. \_\_\_\_\_

Answer the following about Sexual versus Asexual Reproduction:

a. asexual reproduction

b. sexual reproduction

32. \_\_\_\_\_ type of reproduction where two parents are required

33. \_\_\_\_\_ when the new organism grows off the parent organism

34. \_\_\_\_\_ where the offspring receives an exact copy of the parents DNA

35. \_\_\_\_\_ type of reproduction that occurs with one parent

36. \_\_\_\_\_ cactus can reproduce this way

37. \_\_\_\_\_ complex animals like us, can only reproduce this way

38. \_\_\_\_\_ when a bacteria cell splits into two bacteria cells

Fill in the blank below for the type of asexual reproduction being described:

a. budding

b. fission

c. regeneration

39. \_\_\_\_\_ the ability of a starfish to re-grow a lost arm

40. \_\_\_\_\_ when bacteria split in two

41. \_\_\_\_\_ when a the offspring grows off the parent organism

42. \_\_\_\_\_ most plants can grow offspring this way

Use the letters about to put the line provided to describe the correct stage of Mitosis:

a. anaphase

b. interphase

c. metaphase

d. prophase

e. telophase

43. \_\_\_\_\_ time of growth & development for the cell

44. \_\_\_\_\_ cytoplasm is equally dividing into two new cells

45. \_\_\_\_\_ chromatids are lined up in the middle of the cell

46. \_\_\_\_\_ chromatids and spindle fibers are becoming visible

47. c \_\_\_\_\_ spindle fibers are at their longest.

48. \_\_\_\_\_ considered first "true" phase of Mitosis

49. \_\_\_\_\_ chromatids have separated into chromosomes and are moving to the opposite sides of the cell

50. \_\_\_\_\_ considered last "true" stage of Mitosis

51. d \_\_\_\_\_ the nucleus and nuclear membrane are dissolving away

52. \_\_\_\_\_ time when DNA is copied

50 qns. total ☺