Name _____ Class _____
Date _____ Cell Cycle Review

Mitosis:

- Division of somatic cells for growth/repair
- Parent cell (46 chromosomes/23 pairs)→ 2 daughter cells each with 46 chromosomes (23 pairs)
- ***ONE*** DNA replication (copying) followed by ***ONE*** division

Draw a diagram in the space below to illustrate this process

Meiosis:

- Production of 4 gametes from one germ-line cell
- Germ-line cell (46 chromosomes/23 pairs)→ each of 4 gametes has 23 chromosomes (no pairs)
- ***ONE*** DNA replication (copying) followed by ***TWO*** divisions

Draw a diagram in the space below to illustrate this process

Discussion Questions: Answer in complete sentences.

1. How are mitosis and meiosis similar?

2. How are mitosis and meiosis different?

3. When might you expect mitosis to occur in your body?

4. Why is mitosis inadequate in producing sex cells (gametes)?

5. Why is meiosis necessary in sexually reproducing organisms?

6. Many asexually reproducing organisms reproduce by simple mitosis. What is one source of genetic variation for these populations?

7. Explain the role of meiosis in generating genetic variation in sexually reproducing populations.

8. How many times will DNA be replicated in Meiosis?