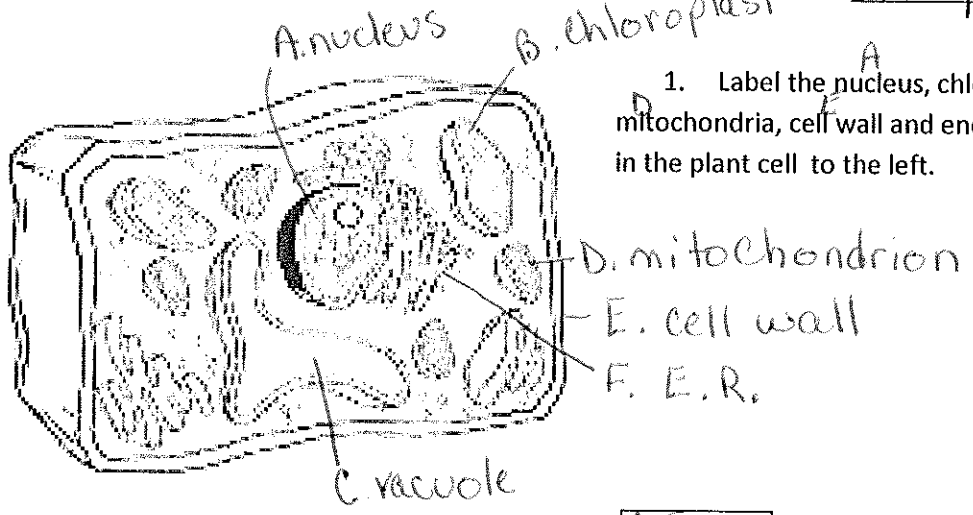
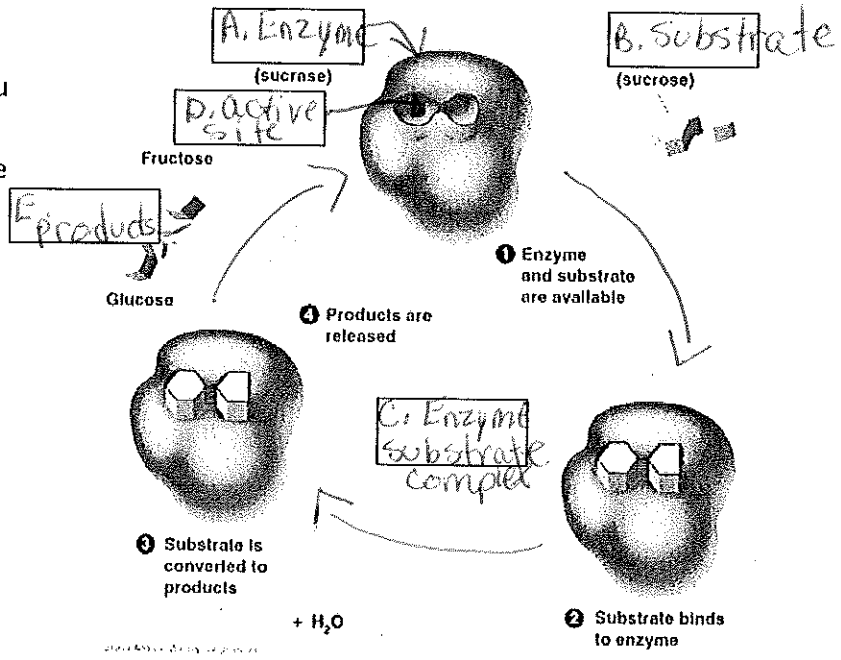
Biology Midterm Review Questions

Name: Key

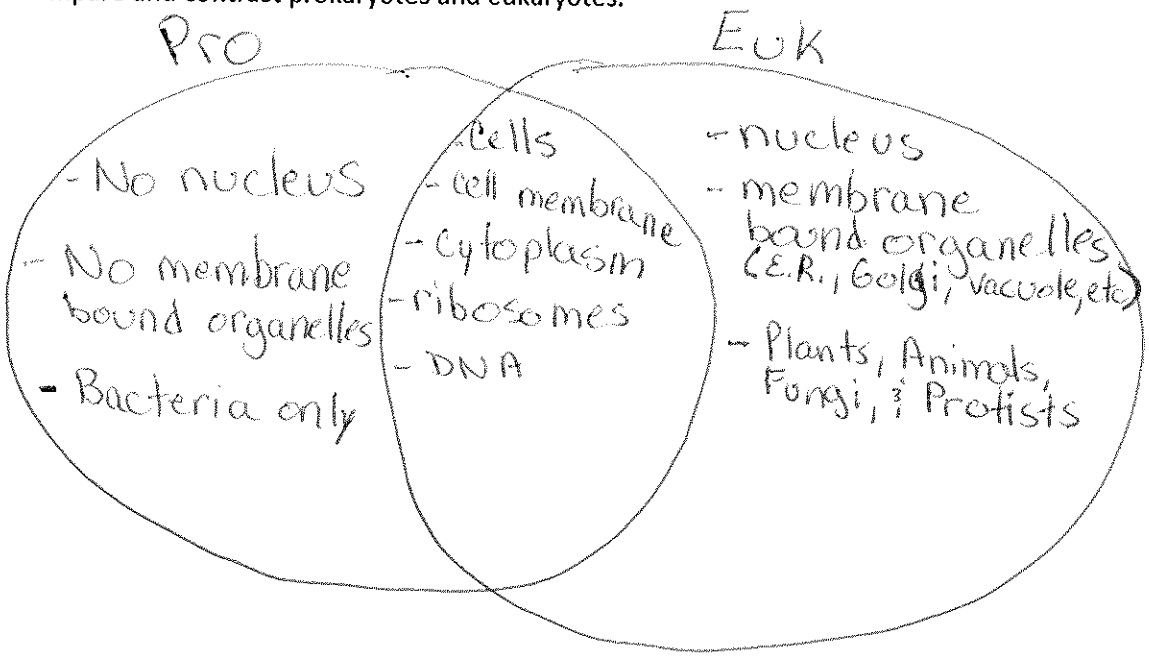


1. Label the nucleus, chloroplast, vacuole, mitochondria, cell wall and endoplasmic reticulum in the plant cell to the left.



2. Label the enzyme reaction. You must label the enzyme, the substrate, the enzyme-substrate complex, the active site and the product.

3. Compare and contrast prokaryotes and eukaryotes.



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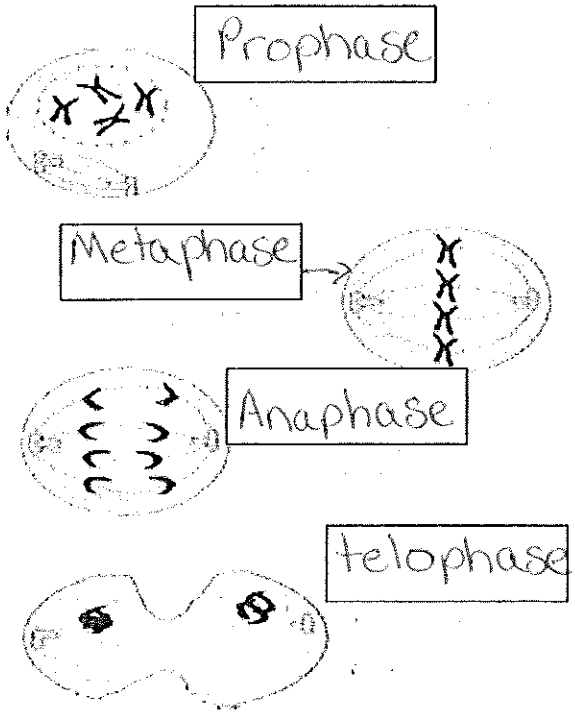
4. Write out the photosynthesis equation in words and chemical formulas.

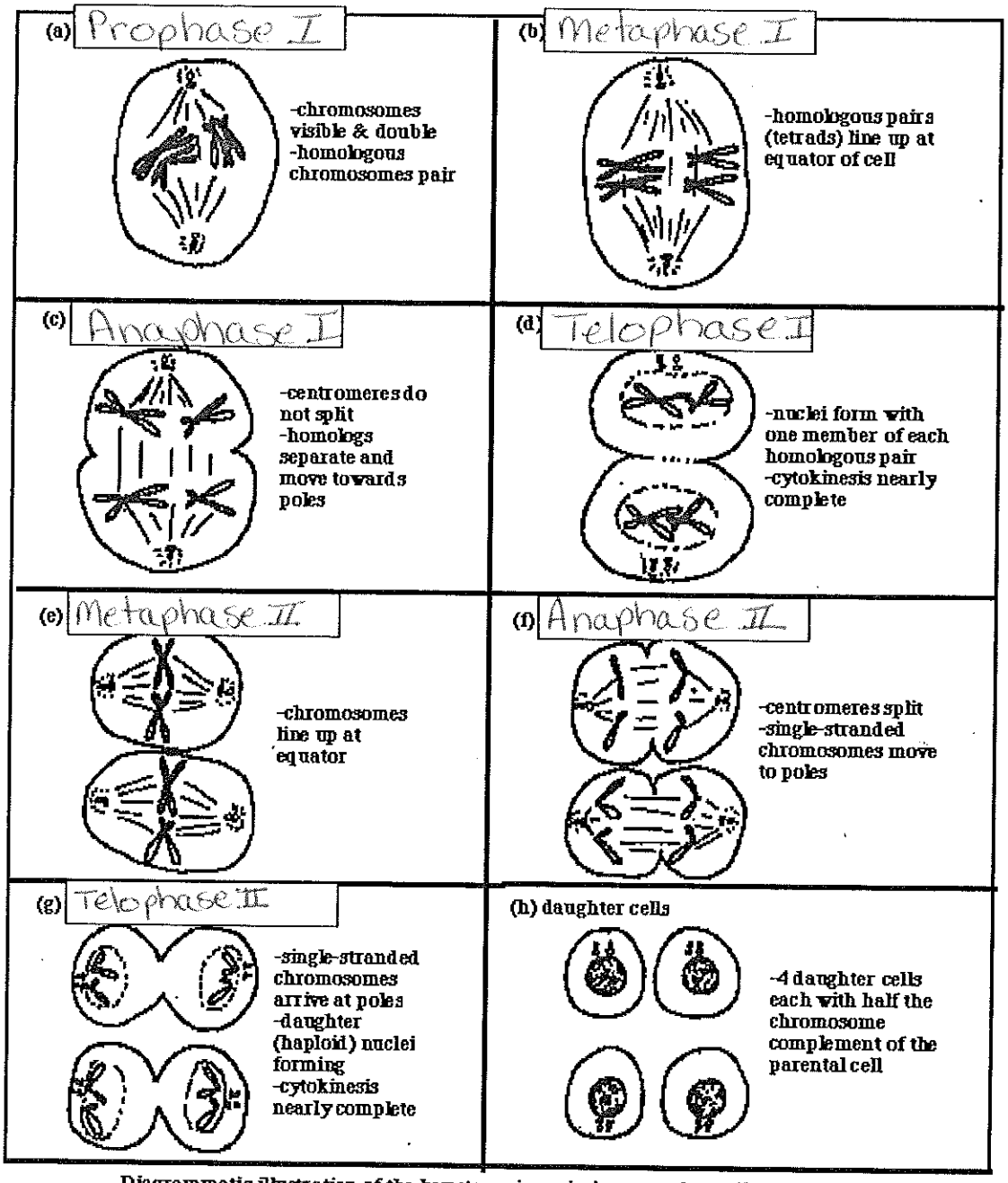
Carbon Dioxide, water and sun produce sugar and oxygen

$6CO_2 + 6H_2O \xrightarrow{light} C_6H_{12}O_6 + 6O_2$

5. Label the steps in mitosis. Here is a word bank that has extra words in it: interphase, cytokinesis, metaphase, mitosis, anaphase, prometaphase, prophase, telekinesis, and telophase.



6. Label the steps in meiosis. Here is word bank with extra words: interphase I, cytokinesis I, metaphase II, mitosis I, anaphase I, prometaphase, prophase II, telekinesis I, telophase II, interphase II, cytokinesis II, metaphase I, mitosis II, anaphase II, prophase I, telekinesis II, and telophase I

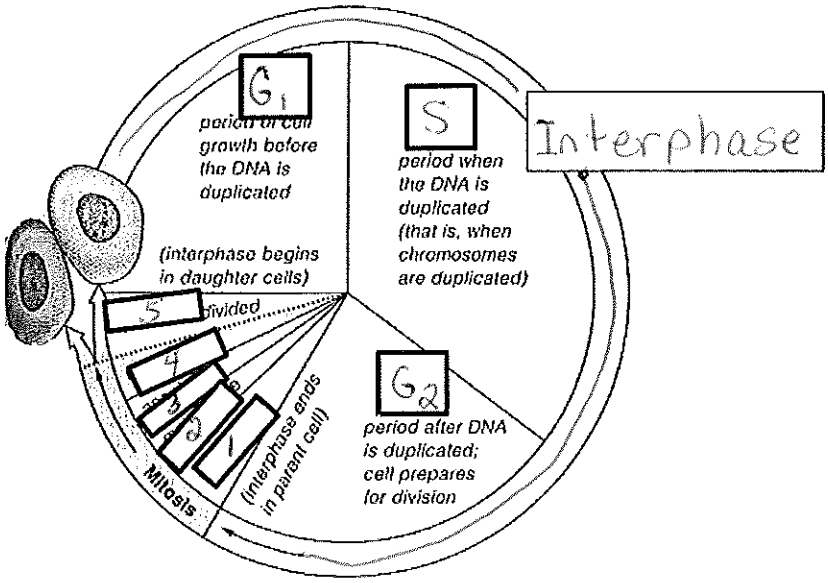


Diagrammatic illustration of the key stages in meiosis as seen in a cell with a 2n (diploid) number of 4 chromosomes.

7. Compare and Contrast mitosis and meiosis.

1 division	2 divisions
2 daughter cells	4 daughter cells
Somatic cells	Gametes
Identical	Varied

8. Label the cell cycle diagram below. Here is a word bank with extra words: interphase, s1, s2, g, cytokinesis, metaphase, mitosis, anaphase, prometaphase, prophase, telekinesis, and telophase.



9. In rabbits, if black fur (B) is dominant to brown fur (b), show a Punnett square where a heterozygous rabbit mates with a brown rabbit. Give all the genotype and phenotype probabilities.

Bb bb

	B	b
b	Bb	bb
b	Bb	bb

Bb - Black - 50%

bb - brown - 50%

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Use amino acid chart

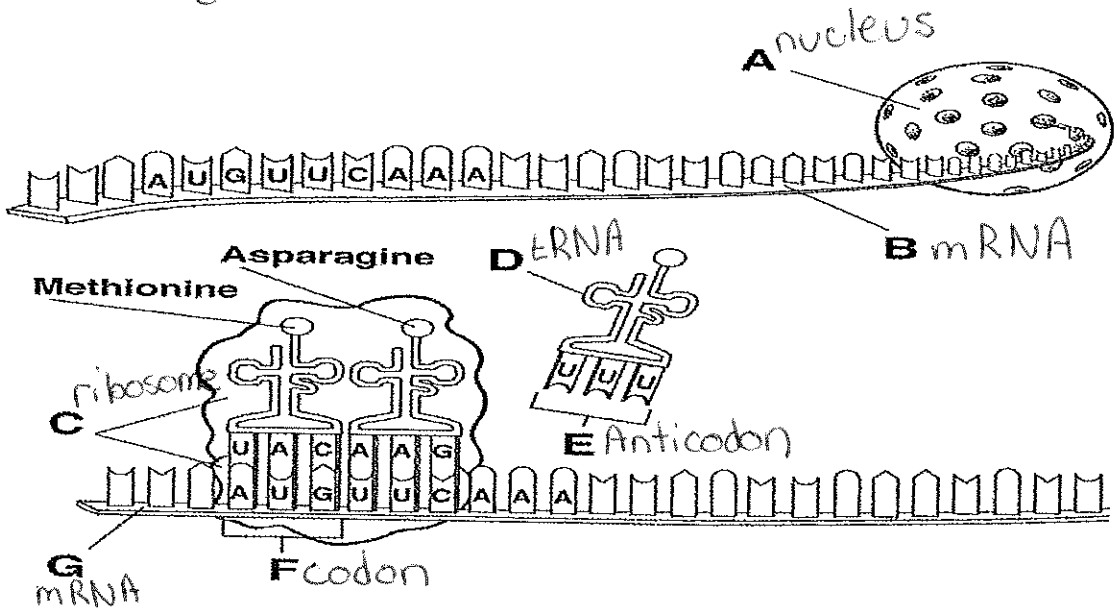
10. Transcribe and translate the DNA strand below.

ATG CCG TAA GCA GTA CCG ATT CAG GAT

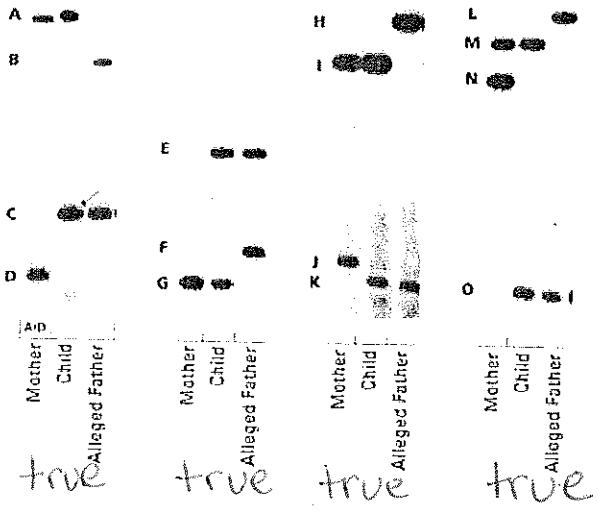
UAC GGC AUU CGU CAU GGC UAA GUC CUA

Tyrosine - Glycine - Isoleucine - Arginine - Histidine - Glycine - Stop - Valine - Leucine

11. Label the diagram of protein synthesis below. Here is a word bank with extra words: tRNA, DNA, nucleus, mRNA, amino acid, ribosome, codon, anticodon, nucleotide strand.



12. For each gel, state whether the alleged father is the true biological father.



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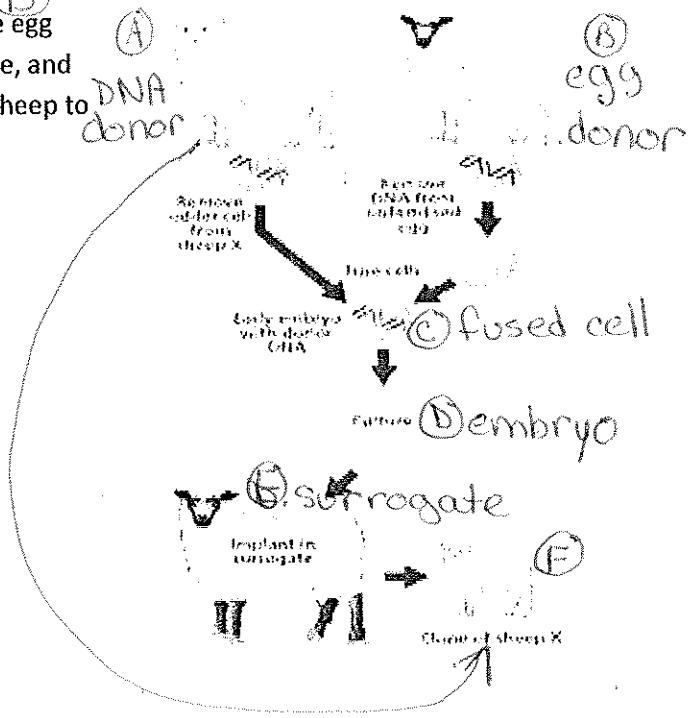
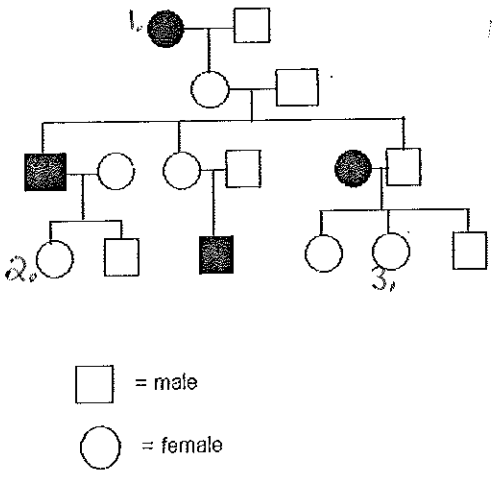
13. For the diagram given, label the cell donor, the egg donor, the fused cell, the embryo, the surrogate, and the clone. Draw an arrow from the "original" sheep to the clone.





14. In the pedigree below, the shaded shapes represent individuals with the recessive trait of attached earlobes. E = free earlobes and e = attached. Give the genotype of each lettered individual on the pedigree.

1. ee
2. Ee
3. Ee

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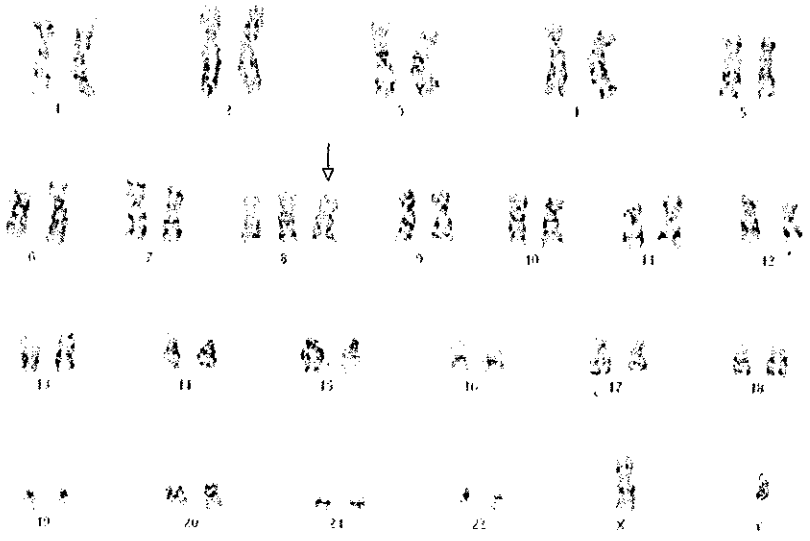
15. Give the notation for the karyotype.



47, XY +8

Warkany Syndrome