

Preview Material for Exam 3- Spring 2003

While camping in New Mexico, Wanda and Louise heard coyotes howling in the night. So when they visited a nearby state park, they asked a few questions about coyotes, and learned that wildlife biologists monitor the coyote population every year in that park (500 square miles). Annual counts of the coyotes resulted in the following data:

Year	Total Number of Coyotes at Start of Year	Number of Births for the Year	Number of Deaths for the Year
1998	250	60	50
1999	260	45	80
2000	225	50	30
2001	245	50	25

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Wanda and Louise admired a venomous lizard displayed in the park visitors' center. The natural history of this venomous lizard, called a *Gila Monster*, explained that its venom contains a neurotoxin that causes paralysis and respiratory failure in small mammals.

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Albinism is an **autosomal recessive** trait that results in the absence of pigment in the skin. Recently at a hospital three babies were accidentally given to the wrong parents.

**Skin pigmentation:**

Couple 1 - both are heterozygous for albinism

Couple 2 - both are homozygous dominant for normal pigmentation

Couple 3 - the male is an albino, the female has normal pigmentation but her father was an albino.

<u>Blood types:</u>	<u>Male</u>	<u>Female</u>
Couple 1	AB	AB
Couple 2	B	A
Couple 3	O	O

Baby Jane      Albino with Type O blood

Baby Shirley    Normal pigmentation with Type AB blood

Baby Huey      Normal pigmentation with Type O blood

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Each year, a few children are born defenseless against disease due to severe combined immune deficiency (SCID), a medical condition in which lymphocytes (including B-cells) do not function properly. There are several forms of SCID, the most common type being an X-linked recessive trait. Other forms of SCID may follow an autosomal recessive inheritance pattern or are the result of spontaneous mutations in a given individual.