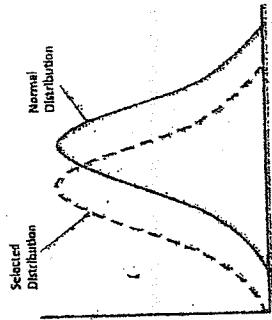
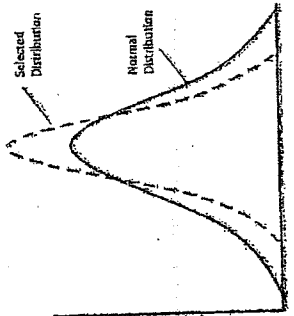


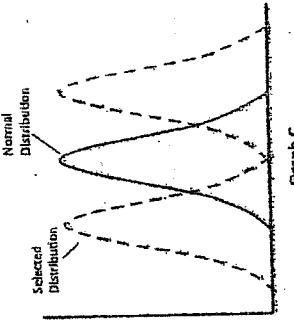
TYPES OF SELECTION IN POPULATIONS



The distribution of the traits in the altered population differs from the original population in that the selected value has decreased (smaller, shorter, lighter, etc.)



The population has changed so that more individuals have the average value of the trait compared to the original population.



Two altered traits appear, each reflecting the two distinct variations of the original population.

Each graph compares the normal distribution of a trait in the original population with the distribution of the trait in the population altered by natural selection.

In the space provided next to each number, write the letter of the graph that illustrates the type of natural selection described.

1. Directional Selection: natural selection that results in a change among the traits of a population in one direction.
2. Disruptive Selection: natural selection that results in a change among the traits of a population in two directions; could lead to two new populations.
3. Stabilizing selection: natural selection that favors the average individuals.

For each scenario below, determine which graph above best depicts the situation.

4. A large valley is flooded and a population of lizards is separated. Over time, they travel in opposite directions to two different places and eventually become so different they can no longer interbreed.
5. In a population of wheat, variation in the height of the wheat decreases over time.
6. In a population of field mice, there are many variations of brown, ranging from a very light brown to a very dark brown. The population becomes more of a medium-brown over time, as individuals that best blend in to their surroundings are favored.

For each scenario below, indicate whether it is stabilizing selection, directional selection, or disruptive selection.



7. A population of arctic hares burrows into the snow for shelter. It is found that the hares on the smaller side are able to burrow between rocks, as well, providing extra protection from predators. Over time, the hare population becomes smaller in size, shifting the normal distribution curve to hare size.

Selection type: _____



8. Limpets are a small species that can often be found on the seashore. They come in 3 variations: dark, light and intermediate. The dark and light color are easier for sea gulls to spot, and therefore they are more commonly hunted.

Selection type: _____



9. If there was a great flood and lemurs that had longer tails were better able to climb and live in trees, while the other phenotypes were not able to survive as well, which type of selection would this be?

Selection type: _____

10. In a population of spiders that were hunted by sparrows, the large spiders were easy to spot, but moved very quickly; the small spiders were not very easy to spot; the average size spiders were easier to spot than the small ones, but moved more slowly than the large ones, thus making them the most hunted, which type of selection would this be?

Selection type: _____



11. In a wild leopard population, cubs that are born with low birth weights lose heat more quickly and tend to die, while babies that are too large are not able to deliver through the pelvic bones of the mother leopard. This leads to a high mortality rate for cubs that are born too small or too large.

Selection type: _____

