

Solutions

Each answer shows the steps, then the **result**.

2.1

- Any two: variation, heritability, overproduction, differential survival/reproduction

2.2

- An organism's reproductive success (number of surviving offspring)

2.3

- Only heritable traits can be passed to offspring, so only they can change the population's makeup over generations

3.1 B

- reproductive success

3.2

(a)

- Dark beetles are better camouflaged, so more survive; survivors reproduce more, passing on the dark allele; over generations the dark allele becomes more common

(b)

- The trait (color) is heritable

3.3

- More offspring are produced than can survive, so there is competition; this lets the better-suited individuals survive and reproduce, driving selection