Keystone BIOLOGY

Supplemental Materials Key

Name: _____

Date: _____

Answers to the Practice Questions

1. a
2. d
3. b
4. Prokaryotes do not contain a nucleus or membrane-bound organelles. Eukaryotes contain a large nucleus and many membrane-bound organelles.
5. d
6. a
7. c
8. b
9. b
10. b
11. d
12. a
13. b
14. b
15. a
16. b
17. b
18. c
19. d
20. a
21. c
22. d
23. Anaphase I or II
24. d
25. d
26. d
27. Part A

	W	**W**
R	RW	RW
R	RW	RW

Note: R = red, W = white, RW = roan

Part B
Roan calves have both red and white hair. This is an example of a co-dominant inheritance pattern in which neither allele is dominant over the other, but in which *both* alleles are expressed. In this example, let R represent the red allele and W represent white allele. A roan calf will result from receiving the R allele from the red parent and the W allele from the white parent. The calf's genotype will be RW and it's phenotype will be roan.

Part C

	R	**W**
R	RR (red)	RW (roan)
W	RW (roan)	WW (white)

Genotype: 25% RR, 50% RW, 25% WW
Phenotype: 25% red, 50% roan, 25% white

28. d
29. b
30. c
31. a
32. a
33. e
34. b
35. d
36. b
37. Part A
The mouse and rat share a more recent common ancestor than do the cow and rat. The mouse and rat are more closely related than the cow and rat because the mouse and rat have fewer differences in base pairs.

Part B
Different organisms having a common gene supports the theory of evolution by suggesting that these organisms share a common ancestor. The closer the genetic sequences of organisms are to each other, the more closely related they are in evolution and the more recently they diverged from a common ancestor.
38. d
39. b
40. c
41. c
42. d
43. a
44. a
45. e
46. c
47. b