AP Biology – Genetics Practice Answer Key

Note: anywhere that allele letter is not specified, you may choose your own. Which side of a square holds maternal vs. paternal gametes is also up to you.

MONOHYBRID AND POLYHYBRID CROSSES

1.

	A	a
A	AA	Aa
a	Aa	aa

Chance normal skin: 75%
Chance albino: 25%
If normal, 66% chance carrier

2.

	H	h
h	Hh	hh
h	Hh	hh

50% Hh, 50% hh
50% horns, 50% no horns

3.

	B	b
B	BB	Bb
b	Bb	bb

25% BB, 50% Bb, 25% bb
75% brown, 25% blue

4.

	W	W
W	WW	WW
w	Ww	Ww

0% short whiskers

5.

	F	f
F	FF	Ff
f	Ff	ff

The trees must both be heterozygous. Some offspring are ff; therefore, both parents must have at least one f allele. Both parents are fuzzy, therefore, they also have at least one F allele.

6.

	R	r
R	RR	Rr
r	Rr	**<u>rr</u>**

White is dominant. If red is dominant, as shown above, you *could* cross two red trees and yet get white offspring (25% chance). However, if white is dominant, a white tree must have at least one dominant allele, which means a parent would've had that allele, making the parent white.

7. Cow A x bull

	h	h
h	hh (D)	

Cow B x bull

	H	h
h		hh (E)

Cow C x bull

	h	h
H	Hh (F)	

A: hh, B: Hh, C: hh, D: hh, E: hh, F: Hh, bull: Hh