

1) P: rough
r - smooth
B - black
b - albino

$RR Bb \times rr Bb$

| | | |
|-----|-------|-------|
| | R B | R b |
| r B | Rr BB | Rr Bb |
| r b | Rr Bb | Rr bb |

75% 25%
a) P: 3:1

Rough: black : Rough: albino

b) $0.75 \times 26 = 20$ round up?

2 PTC - A
taste blindness - a
normal - B
pigment albino - b

$Bb aa \times bb Aa$

| | | |
|-----|-------|-------|
| | B a | ba |
| b A | Bb Aa | bb Aa |
| b a | Bb aa | bb aa |

normal pigment: bitter taste
albino: bitter taste
normal pigment: taste blindness
albino: taste blindness

3) ~~Albinism~~
a - albino

B - normal
b - albino
A - PTC
a - taste blindness

$bb aa \times Bb Aa$

| | | | | |
|-----|------|------|------|------|
| | BA | Ba | bA | ba |
| b a | BbAa | Bbaa | bbAa | bbaa |

6
P
normal pigment: bitter
normal pigment: taste blind
albino: bitter
albino: taste blind

47. X^D - Normal
 X^d - Homophilein

a)

| | | |
|-----|----------------------|----------------------|
| | X^D | X^d |
| dad | $X^D X^D$ $X^D y$ | $X^D X^d$ $X^d y$ |

→ 2 sons! Homophilein

b) son could be normal! $X^D y$

c) $X^D X^D$ or $X^D X^d$

d) No! son can only have it ($X^d y$) or not ($X^D y$)
 In this case, mom always determine the X for sons!

5.) $I^A = I^B > i$
 $A = B > O$

Mr. Green

| | | |
|-------|----------------------|---------|
| | I^B | i |
| I^A | $I^A I^B$ $I^A i$ | $I^A i$ |
| i | $I^B i$ | ii |

Ms.

| | | |
|-------|----------------------|---------|
| | I^B | i |
| I^A | $I^A I^B$ $I^A i$ | $I^A i$ |
| I^A | $I^A I^B$ $I^A i$ | $I^A i$ |

S. AB, A, B, O

so. AB, A

It depends if mom is hetero or homozygous A.

67. C^R - red
 C^Y - yellow
 $C^R C^Y$ - reddish/yellow

F_1 $C^R C^R \times C^Y C^Y$

| | | |
|-------|-----------|-----------|
| | C^R | C^R |
| C^Y | $C^R C^Y$ | $C^R C^Y$ |
| C^Y | $C^R C^Y$ | $C^R C^Y$ |

G 100% $C^R C^Y$
 P 100% reddish/yellow

F_2

| | |
|-------|---------------------|
| | $C^R C^Y$ |
| C^R | $C^R C^R$ $C^R C^Y$ |
| C^Y | $C^R C^Y$ $C^Y C^Y$ |

G 1:2:1
 $C^R C^R : C^R C^Y : C^Y C^Y$

P 1:2:1

Red : Reddish : yellow
 yellow

b) $160 \times 0.25 = 40$

7). C curly
 c straight
 A - normal pigment
 a - albino

Cc aa x Cc Aa

8). F - normal
 f - ataxic

| | | | |
|---|----|----|----|
| | F | f | |
| F | FF | Ff | or |
| f | Ff | ff | |

9). L - long
 l - short

L L
 l LL Ll
 l LL Ll

100% long!

10). X^B - yellow
 X^b - black
 $X^B X^b$ - tortois

Sex of tortois has to be female so you get the combination $X^B X^b$... male can only be $X^B y$ or $X^b y$
 yellow black

| | | | |
|-------|-----------|-----------|--|
| | X^B | X^b | |
| X^B | $X^B X^B$ | $X^B X^b$ | Yellow female tortois female black male black yellow male |
| y | $X^B y$ | $X^b y$ | |