1) $X^GX^g \times X^gY$

	X^G	X^g
X^g	X^GX^g graceful ♀	X^gX^g gruesome ♀
Y	X^GY graceful ♂	X^gY gruesome ♂

Genotypic: $1X^GX^g : 1X^gX^g : 1X^GY : 1X^gY$

Phenotypic: 1 graceful female : 1 gruesome female : 1 graceful male : 1 gruesome male

2) Normal woman: X^FX^f
Color-blind man: X^fY

	X^F	X^f
X^f	X^FX^f	X^fX^f
Y	X^FY	X^fY

a) 50%

b) 25% (X^fY)

c) 50% (X^fX^f)

d) 50% (X^FX^f or X^FY)

3) Males only require one copy of the colour-blindness allele, for the trait to show. Females would need two copies (if they only have one, they are carriers who do not show the trait themselves.

4a) Yes, men are correct in looking at their mother's family. Males' X chromosomes are from their mothers. So, if a man had inherited an X-linked condition, it would likely show up elsewhere in the mother's family (especially among other males).

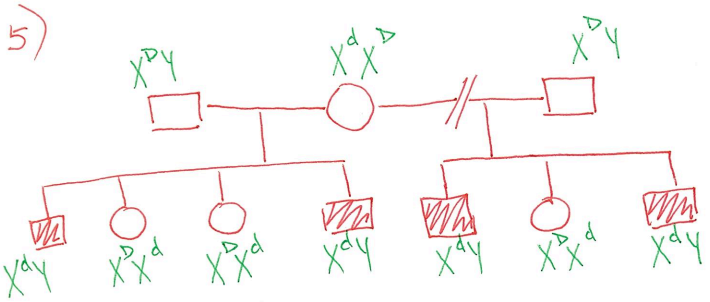
b) Woman must be a carrier, since she inherited her father's bald allele.

$X^bX^B \times X^BY$

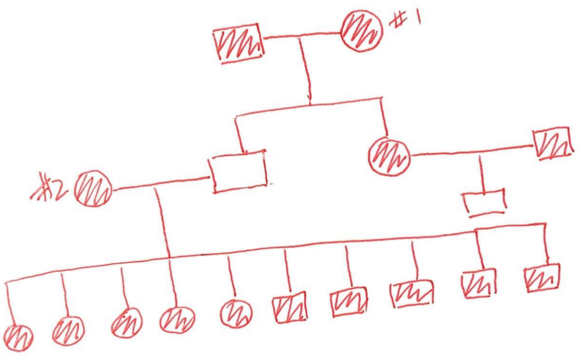
	X^B	X^b
X^B	X^BX^B	X^BX^b
Y	X^BY	X^bY

Of the sons, I expect half to go bald.
2 of the 4 (on average) should go bald.

5)



6) Tongue-rolling allele must be dominant : non-rolling son got X chromosome from mom and is non-rolling. This means that mom was a heterozygote.



Woman #2 must be X^TX^T since all her offspring are tongue-rollers, including all the boys (who have a 50% chance of inheriting each of her X chromosomes).

The tongue-rolling daughter is X^TX^+; her husband is X^TY.

	X^T	X^+
X^T	X^TX^T	X^TX^+
Y	X^TY	X^+Y