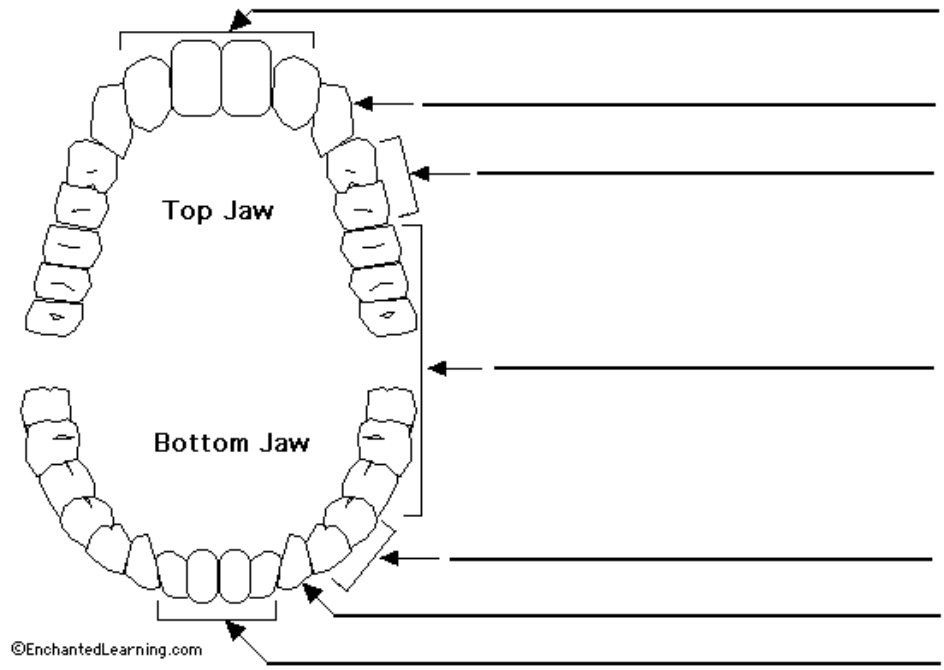
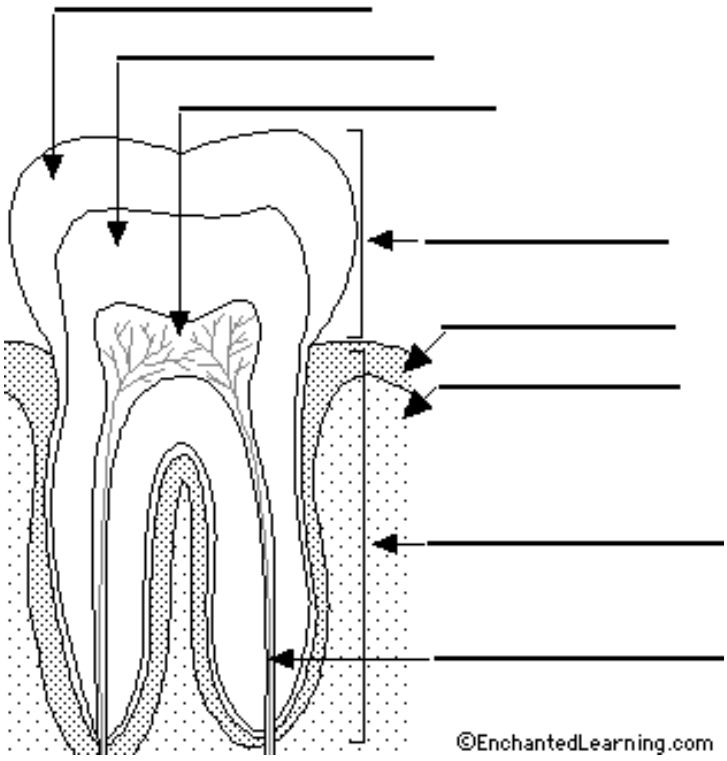
Forensic Science

Review: Lab & Calculations

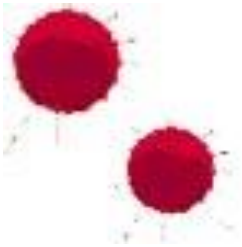
1. Label the set of adult teeth.

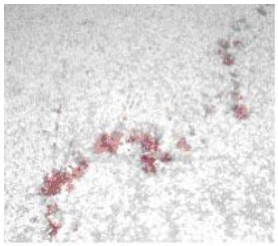


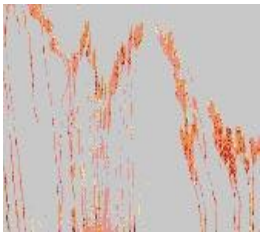
2. Label the tooth diagram.



3. Label the type of blood spatter pictured.

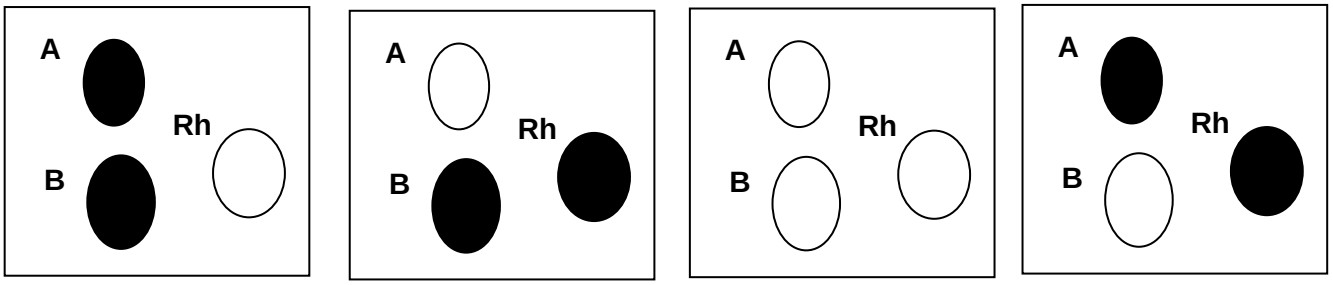






4. Draw a picture of a medium velocity impact spatter and a high velocity impact spatter.

5. Determine the blood type using the tests below. A darkly shaded well indicates agglutination.



6. Determine the probability of the following blood types:

AB+, MM

B-, MN

O+, MM

A+, NN

Type:	% of U.S.
MM	**30**
MN	**48**
NN	**22**

Type	% in U.S.
A	**42%**
B	**12%**
AB	**3%**
O	**43%**
Rh+	**85%**
Rh-	**15%**

7. Calculate the frequency of a person having the genotype below using the frequencies given below.

Locus	**Mom**
D3	14, 18
VWA	18
FGA	22, 25

Allele Frequencies

D3		**vWA**		**FGA**	
Allele	Freq.	Allele	Freq.	Allele	Freq.
13	.011	14	.102	18	.017
14	.089	15	.128	19	.067
15	.299	16	.218	20	.145
16	.246	17	.251	21	.187
17	.207	18	.226	22	.182
18	.137	19	.067	23	.156
		20	.011	24	.120
				25	.064
				26	.036

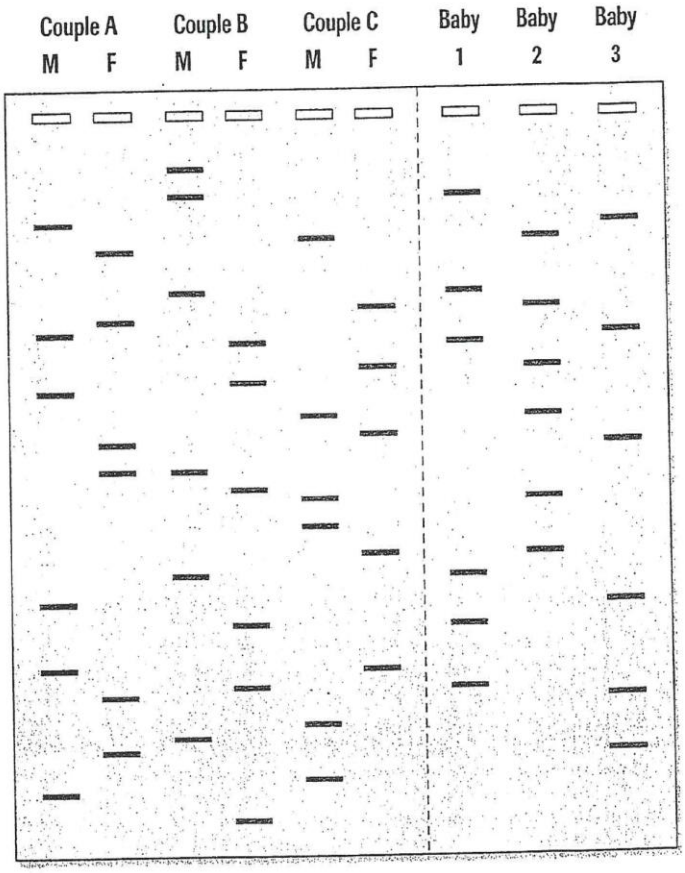
8. Fill in the missing genotypes for Mr. Cash.

Person	D3	VWA	FGA	AMEL	D8
Mr. Cash				X,Y	
Mrs. Cash	18	17, 21	20,25	X	13, 19
Joey Cash	16,18	15, 17	20,27	X,Y	13,17
Amelia Cash	18, 21	11, 21	25, 27	X	8,19
Stefani Cash	16,18	15, 21	22,27	X	17,19

Could a child with the following genotype be a child of Mr. Cash's with a previous wife? Why/Why not?

D3: 16, 18 VWA: 15,19 FGA: 21,24 AMEL: XY D8: 8, 12

9. Three babies were thought to have been switched at a hospital. Use the DNA fingerprints of the three sets of parents and the three babies to determine which child belongs to each set of parents.

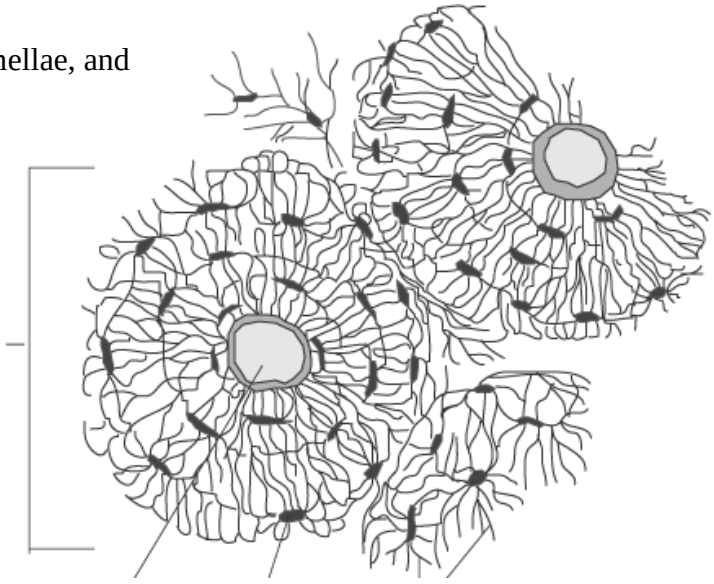


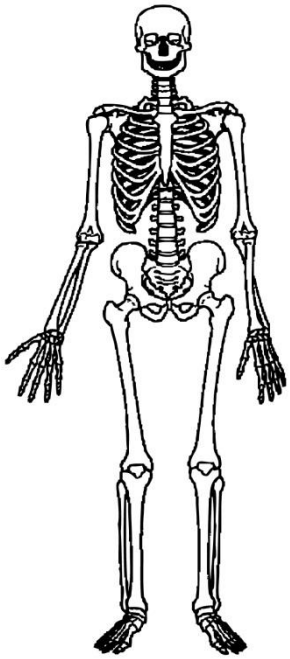
Couple A = Baby #_____

Couple B = Baby #_____

Couple C = Baby #_____

10. Label the Haversian system, Haversian canal, lamellae, and osteocyte on the diagram to the right.





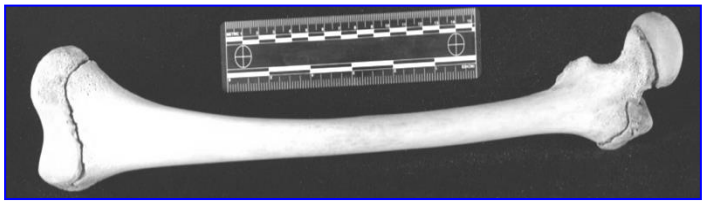
11. Label the humorous, tibia, femur, skull, and pelvis on the skeleton to the left.

12. A femur found to be 39 cm and humerus found to be 27 cm. Using the formulas below, approximately how tall was this woman?

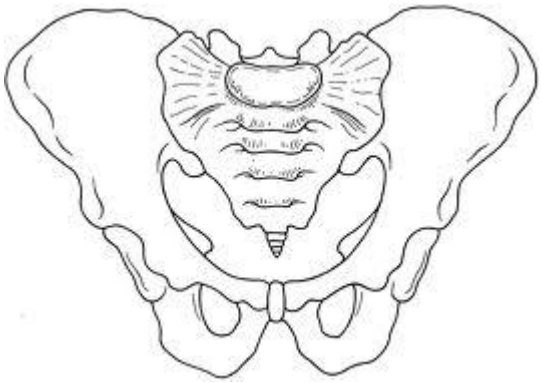
Female humerus: 3.36 (MLH) + 67.97 $\pm$ 4.45

Female femur: 2.47 (MLF) + 54.10 $\pm$ 3.72

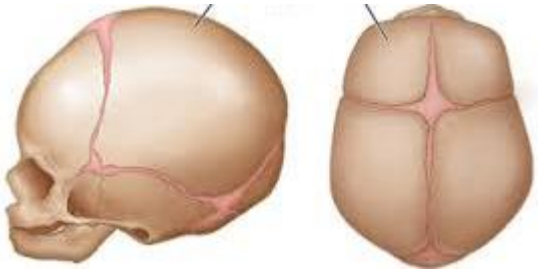
13. Child or Adult?



14. Male or female?



15. Child or Adult?



16. Male or Female?

17. Child or Adult?