Name _____

FORENSIC SCIENCE 2018 LAB PRACTICAL FINAL EXAM

1. INDIVIDUAL AND CLASS EVIDENCE

Identify the three items in the tub as either individual evidence or class evidence.

item #1: _____ item #2: _____ item #3: _____

2. PROBABILITY AND CLASS EVIDENCE

A hit and run driver crashed into a parked car in an office building's parking lot. Witnesses said that the driver was a blonde female driving a blue car. There are 76 people employed in the office building. How many people in the office building would you expect to fit this description?

number of employees: 76
number of female employees: 33
number of blonde employees: 19
number of people driving a blue car: 16

answer: _____

3. HANDWRITING ANALYSIS

Examine the attached page of handwriting samples to determine which suspect is guilty of writing the ransom note.

answer: _____

4. DENSITY

Determine the density of a metal cylinder. Choose just one of the cylinder. Once you have the density, refer to the table below to identify the metal. Show your work below.

cylinder #: _____ identity of the metal: _____

METAL	DENSITY
aluminum	2.7 g/mL
brass	8.6 g/mL
copper	9.0 g/mL
gold	19.3 g/mL
lead	11.3 g/mL
silver	10.5 g/mL
steel	7.9 g/mL

5. BLOOD ALCOHOL CONTENT

Calculate the blood alcohol content for a 140-lb female who drank 48 ounces of beer labeled at 4.3%.

$$BAC_{female} = \frac{0.085 \times [\text{volume consumed}\} \times [\% \text{ alcohol}]}{\text{body weight}}$$

answer: _____

Name _____

6. HAIR ANALYSIS

Choose one of the microscope stations. There are two slides at each scope—one is human and one is animal. Complete the data for the two slides.

HUMAN—SLIDE # _____

COLOR:	Be specific on color:_____ Dyed? _____
MEDULLA: (Check all that apply.)	____ present ____absent ____ continuous ____ interrupted ____fragmented ____opaque ____translucent
ROOT END:	____root present ____no root
TIP END:	____tapered ____cut ____frayed ____split ____not present

ANIMAL—SLIDE # _____

COLOR:	Be specific on color: _____
MEDULLA:	Describe the medulla's color, shape, etc. Also, draw the hair below and label the medulla.
What is the approximate medullary index? (Check one.)	____0-30 ____30-60 ____60-99

7. SOIL ANALYSIS

Examine two soil samples. Describe each, including color, inclusions, etc. and determine the pH of each.

SOIL SAMPLE #	**SOIL SAMPLE #**
DESCRIPTION:	DESCRIPTION:
pH	

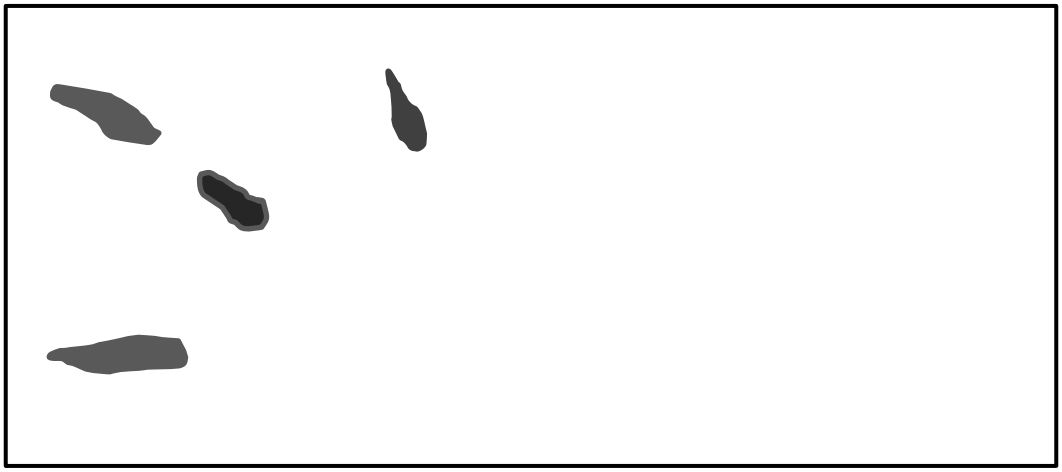
Name _____

8. BLOOD ANALYSIS

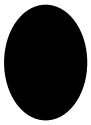
PART 1: Determine the blood types of the following suspects:

	ANTI-A SERUM	ANTI-B SERUM	ANTI-Rh SERUM	BLOOD TYPE
SUSPECT 1:	+	-	+	
SUSPECT 2:	-	-	+	
SUSPECT 3:	+	+	-	
SUSPECT 4:	-	+	-	

PART 2: Draw a circle around the area of convergence of the following bloodstains.



PART 3: Determine the angle of impact of the following blood drops.

A: 

angle of impact: _____

B: 

angle of impact: _____

9. FINGERPRINTING

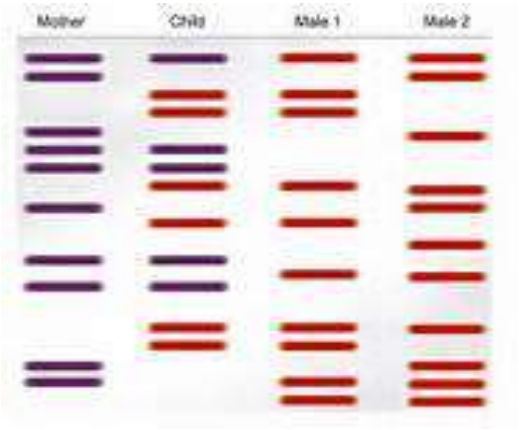
. Dust and lift a fingerprint from a slide. Place the lifted print in the box. State whether the fingerprint is an arch, loop, or whorl.

type of print: _____

Name _____

10. DNA ANALYSIS

Which of the two males below is the father of the child? answer: _____



11: HUMAN REMAINS: HEIGHT

A humerus bone was discovered at a construction site. Estimate the height of the individual it came from.

length of bone (in cm): _____ height in cm: 4.62 x length + 19.00 cm = _____

convert height from cm to feet and inches: _____

12: HUMAN REMAINS: SEX OF SKELETON

What is the sex of the following skeletons? (Circle MALE or FEMALE below description.)

SKELETON 1	SKELETON 2	SKELETON 3
SKULL: blunt eye orbit square mandible low, slanting frontal bone	PELVIS: subpubic angle of 105°	PELVIS: pelvic cavity circular and open
MALE or FEMALE	MALE or FEMALE	MALE or FEMALE

13. HUMAN REMAINS: TIME OF DEATH

Determine the approximate time of death of the following individuals.

A. A female body was found in a home at 3:00 p.m. with a body temperature of 93.7 °F.

B. A body was found outside at 11:00 a.m. with a body temperature of 79.5 °F. The outside temperature is 75 °F.