

Key for lab practical 1. Questions 3, 18, 20, 21, 22, 26, and 37 were worth 2 points, 44 was worth 3 points, and question 33 was eliminated (see below). Lab prelim grades posted on course website are slightly higher than on test paper because I eliminated question 33.

Species names are listed here but they were not required for answer on exam.

1	Identify this structure  Zygomatic arch on Otter ( <i>Lutra canadensis</i> ) skull
2	What is the structure that the paper clip is attached to called?  Postorbital bar on a goat ( <i>Capra hircus</i> ).
3	Is this tooth open-rooted or closed-rooted? How can you tell?  Beaver ( <i>Castor canadensis</i> ) molars with no root present so open-rooted
4	Name this bone  Clavicle on Norway rat ( <i>Rattus norvegicus</i> )
5	What bone has #1166 written on it?  Frontal bone on fox squirrel ( <i>Sciurus niger</i> ).
6	Identify this structure (paper clip attached to)?  Sagittal crest on fisher ( <i>Martes pennanti</i> ), although poorly developed
7	What bone is 1222 written on?  Parietal or frontal on short-tailed shrew ( <i>Blarina brevicauda</i> )
8	What type of tooth is the arrow pointing to?  Premolar or cheektooth on fox squirrel skull ( <i>Sciurus niger</i> )
9	What type of hairs are the long white hairs down the back of this mammal?  Guard hair on opossum ( <i>Didelphis virginiana</i> ), awn also accepted
10	What stance does this species have  Domestic cat ( <i>Felis catus</i> ) skeleton, digitigrade stance

11	<p>What part of the tooth does the paper clip point to?</p> <p>Enamel on a moose (<i>Alces alces</i>) molar, allowed half credit for crown.</p>
12	<p>Could this skull fragment be from a small adult white-tailed deer such as the Florida key deer, that only weighs 15 kg (30 pounds)? Why or why not?</p> <p>Fawn white-tailed deer (<i>Odocoileus virginianus</i>) skull with teeth not fully erupted. Partial credit in some cases.</p>
13	<p>What bone is the point of the paper clip on (i.e., the point you can see)?</p> <p>Occipital bone on a wolf skull (<i>Canis lupus</i>)</p>
14	<p>Is this from a young, prime-aged, or old deer? Why?</p> <p>White-tailed deer (<i>Odocoileus virginianus</i>) jaw with emerging molars, confusion about young, prime, and old age classes which I didn't really go over in class. +0.5 if recognized wear, +1 if recognized erupting teeth.</p>
15	<p>What is the name of the structure with the paper clip taped to it?</p> <p>Auditory bullae on red fox skull (<i>Vulpes vulpes</i>).</p>
16	<p>What kind of tooth does the arrow point to?</p> <p><i>Rangifer tarandus</i>, (Caribou), pointing to an incisiform canine</p>
17	<p>What is this?</p> <p>Frontal bone or horn core on bison (<i>Bison bison</i>), but did not accept pedicel which is for antlered species.</p>
18	<p>Is the distal or proximal end of this object in view? Why?</p> <p>Quill on porcupine, distal end shown. This is not an agouti hair!</p>
19	<p>Could you find a carnassial pair on this skull? Where?</p> <p>Peccary or javelina (<i>Tayassu tajacu</i>), no, you cannot find a carnassial pair</p>
20	<p>What type of tooth is pointed to here? List at least 2 reasons why you know this.</p> <p>Incisor on fox squirrel (<i>Sciurus niger</i>) skull, because of bone tooth is rooted in, or because of tooth formula, or because of diastema.</p>

21	<p>What bone has #679 written on it?</p> <p>Upper _____ Lower _____ Upper i maxillary bone and lower is dentary on moose (<i>Alces alces</i>) skull</p>
22	<p>Do the arrows point to the carnassial pair on this specimen? Why or Why not?</p> <p>No. Teeth on fox (<i>Vulpes vulpes</i>) skull. Mandible yes, skull no.</p>
23	<p>What bone is #<del>961</del>1547 written on?</p> <p>Frontal on red fox (<i>Vulpes vulpes</i>) skull</p>
24	<p>What is the bone pointed to by the paper clip?</p> <p>Vomer on elk (<i>Cervus elaphus</i>) skull</p>
25	<p>What type of tooth has the tape attached to it?</p> <p>Incisor on a beaver (<i>Castor canadensis</i>)</p>
26	<p>Identify the bones the folded and unfolded paper clips are taped to:</p> <p>Folded: _____ Cannon bone (<i>Equus caballus</i>) leg</p> <p>Unfolded: _____ Ulna/radius (<i>Equus caballus</i>) leg</p>
27	<p>Does this animal have bunodont or hypsodont teeth?</p> <p>Black bear (<i>Ursus americanus</i>) skull, bunodont teeth</p>
28	<p>Is the rostrum on this skull broader than long or longer than broad?</p> <p>Otter, to 18B (<i>Lutra canadensis</i>). Rostrum broader than long.</p>
29	<p>In what layer of skin do sweat glands originate (no specimen)</p> <p>Dermis</p>
30	<p>What type of limbs does this species have?</p> <p>Woolly mammoth (<i>Mammuthus primigenius</i>) model with graviportal limbs.</p>
31	<p>Does this animal exhibit any modifications for aquatic life? If so, what?</p> <p>Muskrat (<i>Ondatra zibethicus</i>), adaptations would include flattened tail, short legs with broader surface area, fur</p>

32	<p>What does the arrow point to?</p> <p>Patagium on a northern flying squirrel (<i>Glaucomys sabrinus</i>).</p>
33	<p>What is this opening called that the pencil arrow points to?</p> <p>Infraorbital foramen in a porcupine (<i>Erithazon dorsatum</i>) skull. This is not the orbit although it looks like it might be. Since I did not have this term underlined in the handout, the question was not included in test score either positively or negatively.</p>
34	<p>What is this? <del>What native Minnesota species could it have come from?</del></p> <p>Horn sheath from a cow (<i>Bos taurus</i>) skull. The second part of this question was crossed out in the exam set up in lab.</p>
35	<p>Does this species exhibit any adaptations for fossorial life? If so, what are they?</p> <p>Mole (<i>Scalopus aquaticus</i>) skeleton, adaptations could include the stout bones, the large claws, loss of ear pinnae.</p>
36	<p>How far does the bony palate extend in the proximal direction on this skull?</p> <p>The bony palate ends near the back of last cheek tooth in the proximal direction. Skull (<i>Mephitis mephitis</i>)</p>
37	<p>Identify tooth characteristics of A and B?</p> <p>Some text contrasting the homodont tooth of “reptile” to the edentate status of the anteater (lost teeth)</p>
38	<p>Would you expect this skull to be from a rodent? Why or why not?</p> <p>Squirrel skull (<i>Sciurus carolinensis</i>), could tell by incisors as discussed in handout</p>
39	<p>What is this bone called?</p> <p>Femur on rabbit (<i>Oryctolagus cuniculus</i>) skeleton</p>
40	<p>What is this bone called? Humerus on seal (Otariidae) skeleton</p>
41	<p>What type of antlers are these?</p> <p>Palmate antlers from a moose (<i>Alces alces</i>). Type of antlers, not species.</p>

42	What is the paper clip pointing to? Nares on a fox skull ( <i>Vulpes vulpes</i> )
43	What bone is this? Basisphenoid on a bobcat skull ( <i>Lynx rufus</i> ).
44	How many kinds of hair are on this specimen? What are they called? Fisher skin, I was expecting to see awns, underfur, and bristles.
45	What are some differences between horns and antlers? Antlers are shed while horns are not shed, Antlers often branch, while horns don't
46	No question
47	No question
48	What bone is this? Femur on articulated sloth skeleton.
49	How many incisors does this species have? Caribou ( <i>Rangifer tarandus</i> ) skull, no upper incisors is what I expected for answer, although not specified upper/lower. Ok to answer about lower jaw teeth as well.
50	No question
51	No question
52	What bone is this? Scapula on monkey skeleton.
53	Identify this bone—what is it called? Scapula on mole ( <i>Scalopus aquaticus</i> )
54	What type of cheekteeth do you see here? Muskrat skulls ( <i>Ondatra zibethicus</i> ), hypsodont, prismatic
55	Why would/would not you call this a squirrel (morphological answer please)? Scandentia, look at teeth.
56	What is this? (Extra credit) Mammoth ( <i>Mammuthus primigenius</i> ) tusk piece