

CHAPTER 8: THE APPENDICULAR SKELETON

Quick Review!

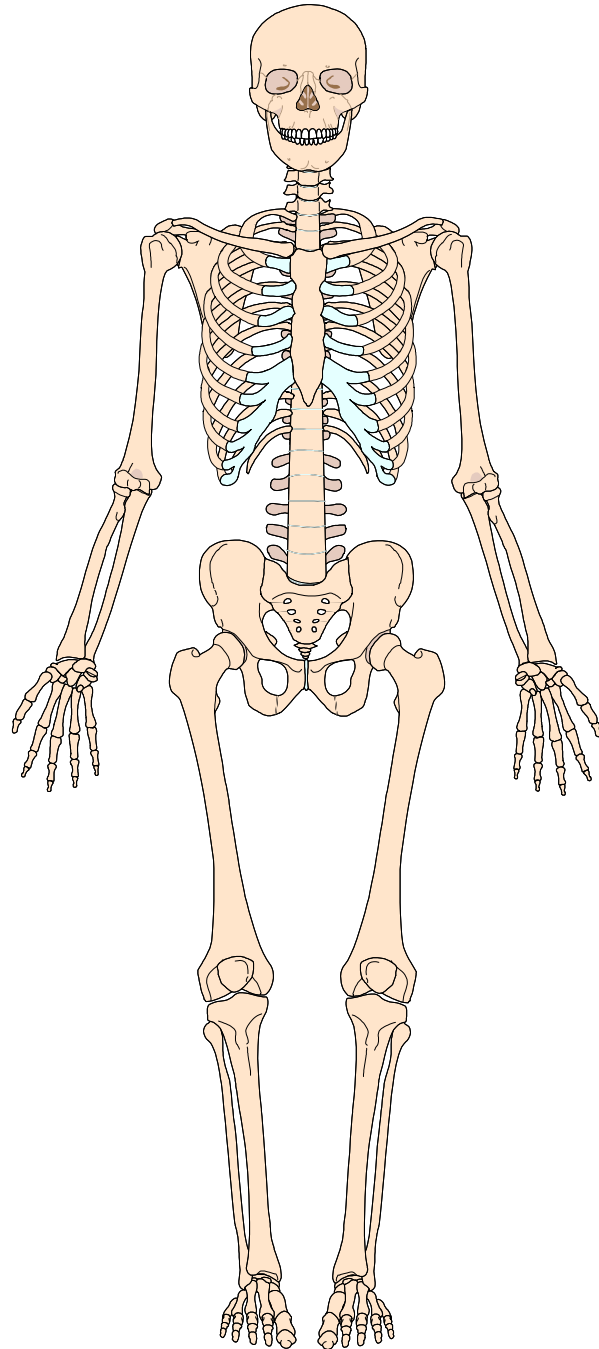
Label the following bones:

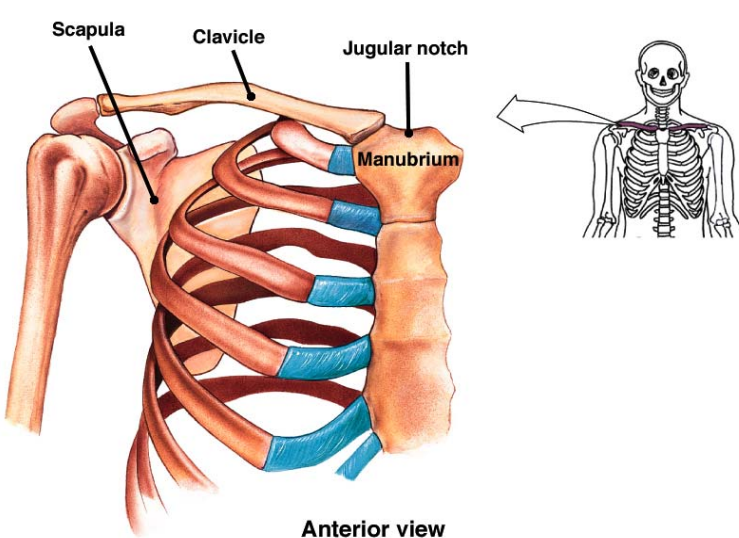
- patella
- scapula
- clavicle
- os coxae (hip bone)
- femur
- humerus
- radius
- ulna
- tarsals
- metacarpals
- carpals
- metatarsals
- phalanges
- tibia
- fibulae

Define

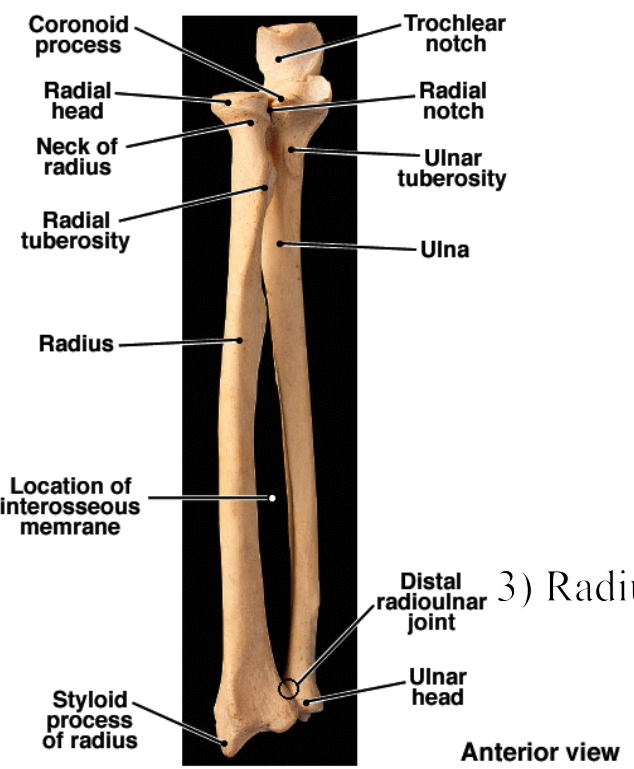
Appendicular skeleton -

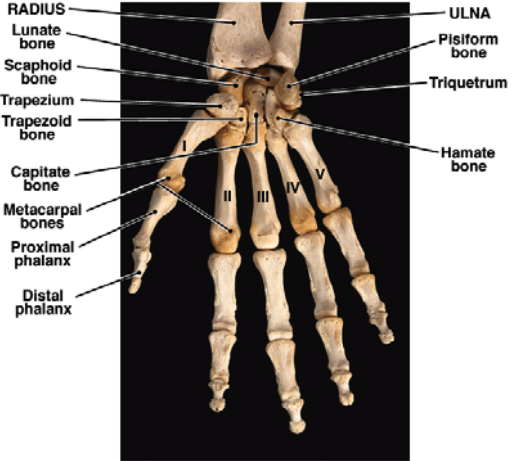
What is a girdle?



	Name of Bone	No.	Description	Articulation
A. Pectoral Girdle				
1) Clavicle		2	collar bone, S-shaped long bone	1) Sternoclavicular joint - clavicle articulates with the sternum medially 2) Acromioclavicular joint - clavicle articulates with acromion process of scapula
2) Scapula  <p style="text-align: center;">Anterior view</p>		2	shoulder blade, triangular flat bone Borders: superior, medial, & lateral Spine: prominent ridge on the posterior surface Acromion process: projection that extends from the spine Coracoid process: process on lateral end of superior margin Glenoid cavity: depression that forms the arm socket	1) Acromioclavicular joint - acromion process of scapular articulates with the clavicle 2) Shoulder joint - glenoid cavity forms socket that articulates with the head of the humerus

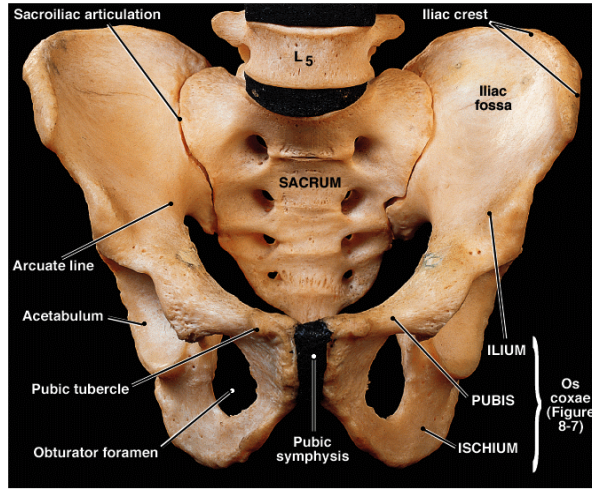
B. Upper Limb			
Name of Bone	No.	Description	Articulation
<p>1) Humerus</p>	2	<p>long bone forming the upper arm</p> <p>Special features: (Proximal) Head - enlargement at proximal end Greater tubercle - lateral projection distal to the head Lesser tubercle - projection on the anterior surface near the head Deltoid tuberosity - roughened area in the middle of the diaphysis</p> <p>(Distal) Medial and lateral epicondyles - rough projections on either side Capitulum - rounded knob below the lateral epicondyle on the anterior surface Trochlea - pulley-like process on the anterior surface Coronoid fossa - depression on the anterior surface above the trochlea Olecranon fossa - depression on posterior surface above trochlea</p>	<p>Proximal 1) Humerus articulates with the glenoid cavity of the scapula</p> <p>Distal 1) Capitulum of the humerus articulates with the head of the radius 2) Trochlea of humerus articulates with the ulna</p>

Name of Bone	No.	Description	Articulation
<p>2) Ulna</p>  <p>3) Radius</p> <p>Anterior view</p>	<p>2</p>	<p>medial bone of the forearm</p> <p>Special features:</p> <p>Proximal Olecranon process (elbow)</p> <p>Coronoid process - anterior projection</p> <p>Radial notch - lateral depression</p> <p>Distal Head</p> <p>Styloid process - posterior side</p>	<p>Proximal</p> <p>1) Coronoid process and olecranon process of the ulna articulate with the trochlea of the humerus</p> <p>2) Radial notch of ulna articulates with the head of the radius</p> <p>Distal</p> <p>1) Ulna articulates with carpals</p>
	<p>2</p>	<p>lateral bone of the forearm (thumb side) in anatomical position</p> <p>Special Features:</p> <p>Head - disc-shaped process on proximal radius</p> <p>Styloid process - lateral side of distal end</p>	<p>Proximal</p> <p>1) Head of radius articulates with capitulum of the humerus</p> <p>2) Head of radius articulates with the radial notch of the ulna</p> <p>Distal</p> <p>1) Radius articulates with carpals</p>
<p>Name of Bone</p>	<p>No.</p>	<p>Description</p>	<p>Articulation</p>

 <p style="text-align: center;">Anterior view</p>	<p>16</p>	<p>4) Carpals: wrist bones (2 rows of 4 bones each)</p>	<p>Proximal - articulate with the radius and ulna Distal - articulate with metacarpals</p>
	<p>10</p>	<p>5) Metacarpals long bones of the palm of the hand</p>	<p>Proximal - articulate with carpals Distal - articulate with proximate phalanges of the fingers</p>
	<p>28</p>	<p>6) Phalanges finger bones (3 per finger, 2 per thumb)</p>	<p>Proximal - phalanges articulate with the metacarpals</p>

C. PELVIC GIRDLE

1) Os Coxae (innominate bone, pelvic bone)



Anterior view

2

hip bones connecting the lower limbs to the sacrum

Special Features:

Ilium - upper flaring portion of hip bones, iliac crest = upper boundary

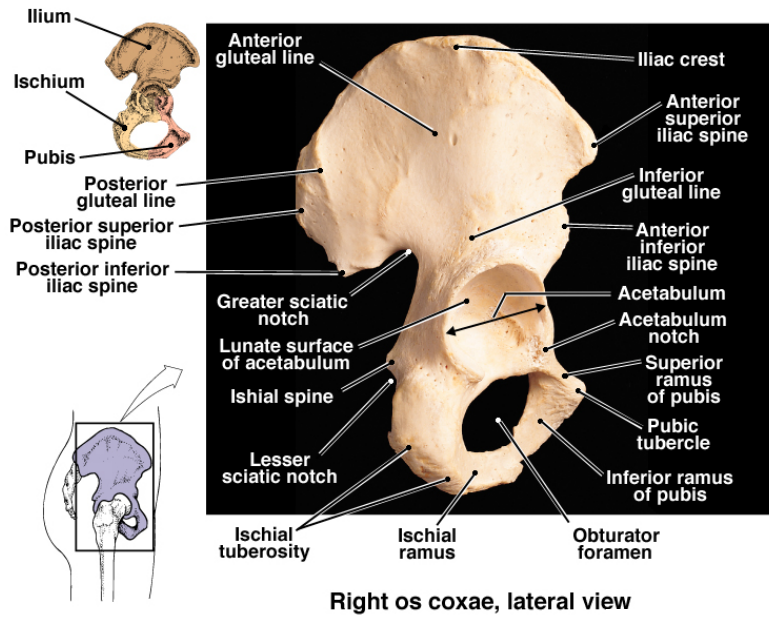
Ischium - low posterior portion

Pubis - medial anterior part
acetabulum - socket
Obturator foramen

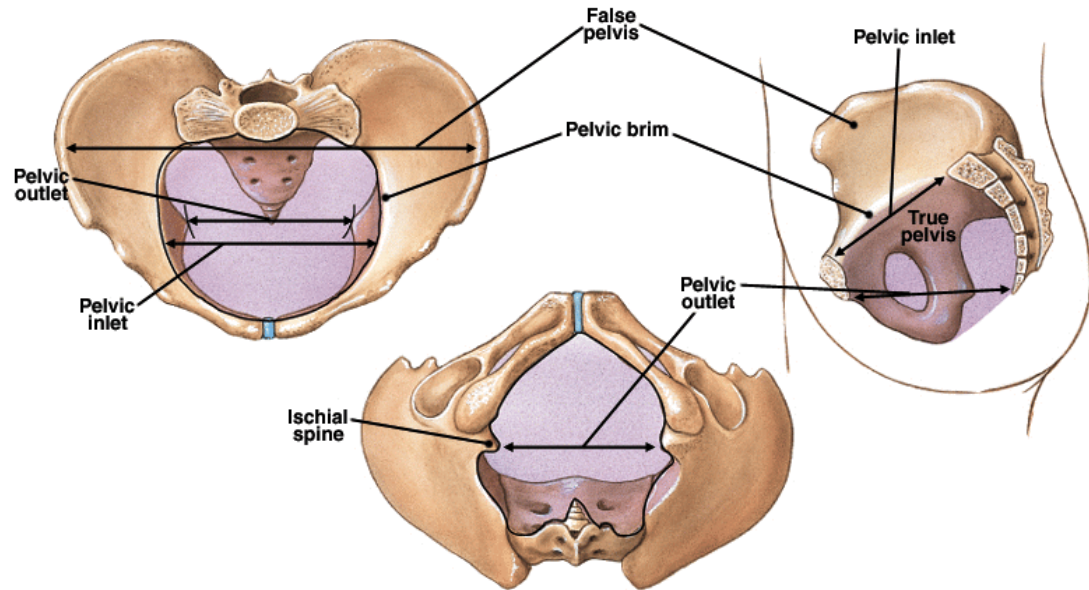
Anterior:
Symphysis pubis - anterior joint between coxal bones

Posterior:
Os Coxae articulate posteriorly with the sacrum

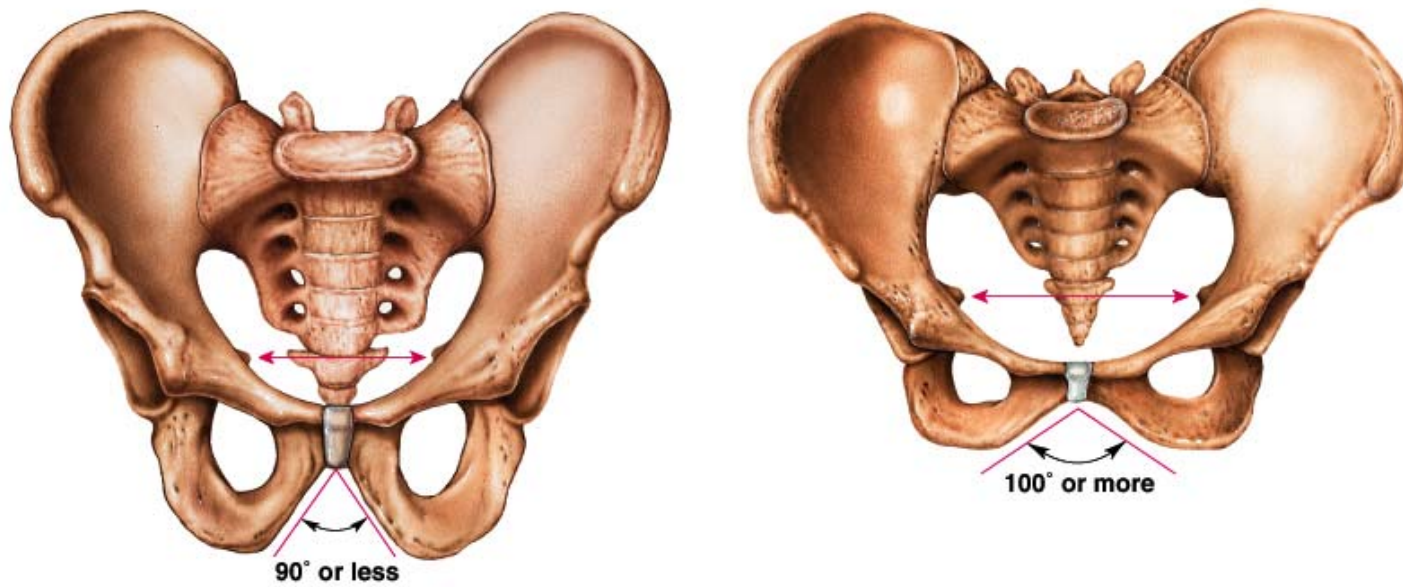
Lateral:
Acetabulum of os coxae articulates with the head of the femur

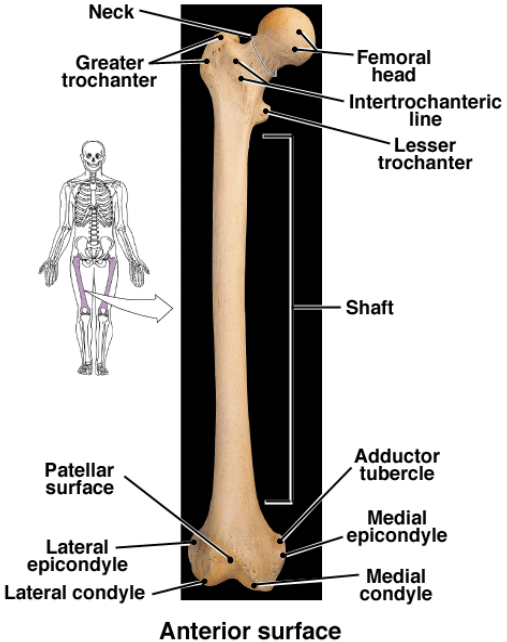


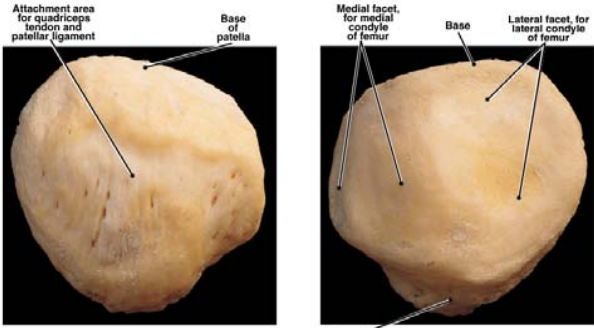
TRUE PELVIS

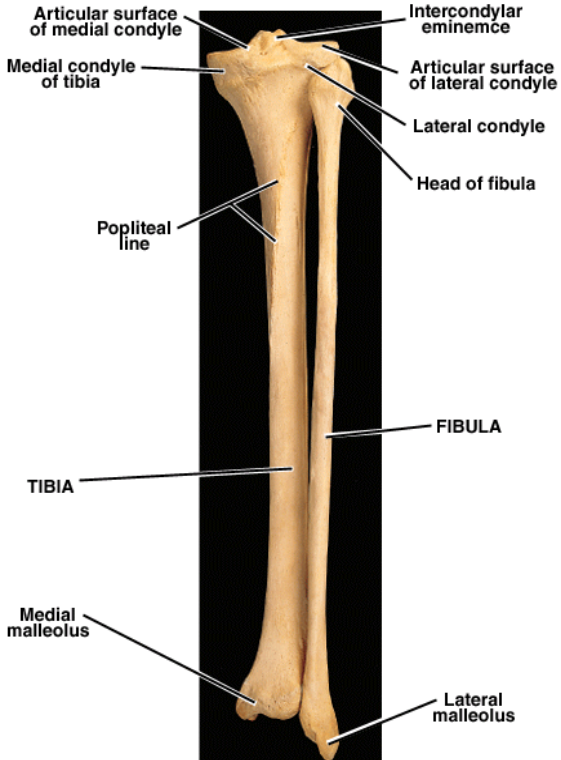


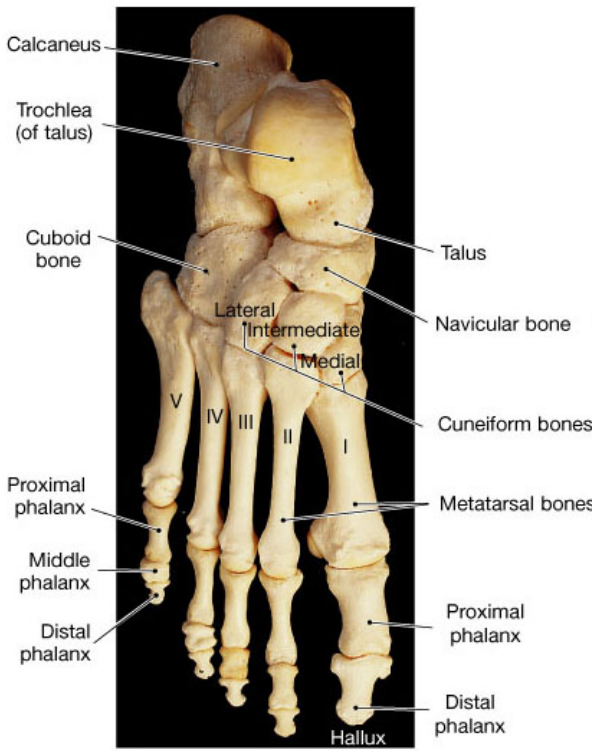
ANATOMICAL DIFFERENCES BETWEEN MALE AND FEMALE (PELVIS)



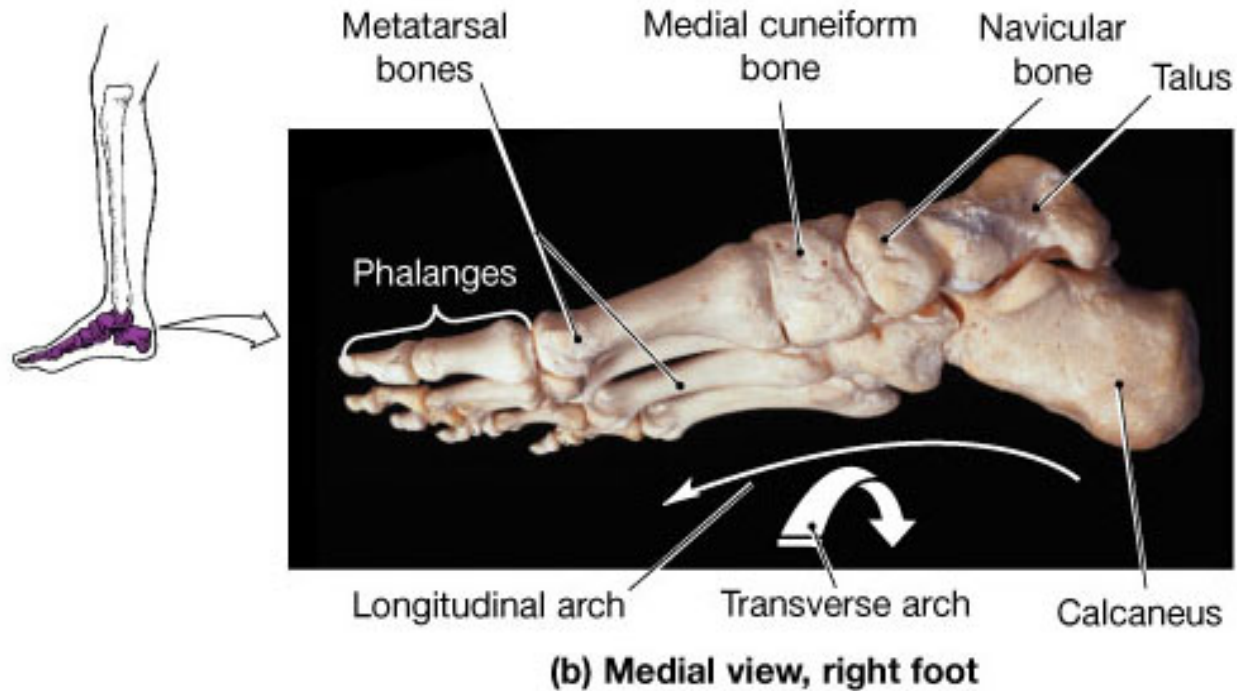
Name of Bone	No.	Description	Articulation
D. Lower Limb			
<p>1) Femur</p>  <p style="text-align: center;">Anterior surface</p>	2	<p>thigh bone</p> <p>Special features: (Proximal) Head - rounded upper end</p> <p>Greater tochanter - projection lateral to head of femur</p> <p>Lesser trochanter - small projection below and medial to greater trochanter</p> <p>Linea aspera - ridge on posterior surface</p> <p>(Distal) Medial and Lateral Condyles - expanded distal end of the femur</p>	<p>Proximal: Head of femur articulates with the acetabulum of the os coxae</p> <p>Distal: 1) Medial and lateral condyles of femur articulate with tibia</p> <p>2) Medial and lateral condyles of femur articulate with posterior surface patella</p>

<p>2) Patella</p> 	<p>2</p>	<p>kneecap, small triangular sesamoid bone</p>	<p>embedded in the tendon of the quadriceps femoris muscle</p> <p>Posterior: articulates with the medial and lateral condyles of the femur</p>
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Name of Bone	No.	Description	Articulation
	2	<p>3) TIBIA</p> <p>shinbone, larger medial bone of lower leg</p> <p>Special features:</p> <p>(Proximal) Medial and lateral condyles - projections on proximal end</p> <p>Anterior crest (margin) - ridge on the anterior surface</p> <p>(Distal) Medial malleolus - large distal process</p>	<p>Proximal:</p> <p>1) medial and lateral condyles of tibia articulate with femur</p> <p>Distal:</p> <p>2) tibia articulates with fibula</p> <p>3) Tibia articulates with tarsal bone (talus)</p>
	2	<p>4) FIBULA</p> <p>small bone of the lower leg, lateral to tibia</p> <p>Special Features:</p> <p>Proximal - head</p> <p>Distal - lateral malleolus</p>	<p>Proximal:</p> <p>1) Head of fibula articulates with lateral condyle of tibia below knee</p> <p>Distal:</p> <p>2) Lateral malleolus of fibula articulates with tarsals (talus)</p> <p>3) Fibula articulates with tibia</p>

Name of Bone	No.	Description	Articulation
 <p>(a) Superior view, right foot</p> <p>Copyright © 2004 Pearson Education, Inc., publishing as Benjamin Cummings.</p>	14	5) TARSALS ankle bones, Talus, calcaneous, heel bone	Proximal: 1) Talus articulates with fibula and tibia Distal: 2) Tarsals articulate with metatarsals
	10	6) METATARSALS long bones of feet	Proximal: 1) metatarsals articulate with tarsals Distal 2) metatarsals articulate with phalanges of toes
	28	7) PHALANGES toes bones, 2 per big toe and 3 per other toes	Proximal: 1) Phalanges articulate with metatarsals

ARCHES OF THE FOOT:



OUT OF CLASS ASSIGNMENT:

Read Section 8-3, Table 8-1, and Table 8-2 on pages 257-258 about some of the individual and age-related variations in the skeletal system. Be able to answer the following questions:

- 1) How does the skeleton differ between males and females (in addition to the pelvic structure)?
- 2) What major changes occur in the skeleton between birth and old age?

ASSIGNMENTS

LECTURE GUIDE

- 1) Color the appendicular bones of the skeleton on page 124 a different color from the axial skeleton. What is a girdle? Is it part of the axial or appendicular skeleton? Name the bones of the pectoral and pelvic girdles.
- 2) Name the bones of the upper extremities (arms, hands, fingers) and the surface markings of the bones. How do they articulate?
- 3) Name the bones of the lower extremities (legs, feet, toes) and the surface markings of the bones. How do they articulate?
- 4) Name the arches of the foot. What are the functions of the arches?
- 5) What are the major differences between the male and female skeleton? Young and old skeleton?
- 6) Describe how the bone articulate to form the following joints: knee, hip, shoulder, elbow, wrist, and ankle.
- 7) What bones make up the pelvis? How do they articulate?

TEXT END OF THE CHAPTER (Chapter 8, pages 260-261)

LEVEL 1 Reviewing Facts and Terms: 1-4, 6-13, 15-17, 20, 21, 23

LEVEL 2 Reviewing Concepts: 24, 25, 28-30

LEVEL 3 Critical Thinking and Clinical Application: 32-34

Answers are located in the back of your text on page Q-9.

STUDENT STUDY GUIDE- Chapter 7 (pages 136-152)

- (L1): Multiple Choice: 1,2, 4-14
Completion: 19-28, 30
Matching: 34-42
Drawing/illustration labeling: Figure 8-1 to 8-10.
- (L2): Concept Map I
Body Trek: all
Multiple Choice: 37-40, 45
Completion: 52-55, 58-63
Short Answer Essay: 67-73, 75
- (L3): Critical thinking/application: 3

Answers to Chapter 8 Study Guide Questions are located on pages 611-614 of the Study Guide.