1. (6 points) The illustration below is a superior view of a cross section of the crus just below the tibial tuberosity. Label all the muscles visible in the section. To the left of the illustration list all crus muscles which are not visible because they lie below the level of this section.

Muscles below level of section
2. (9 points) Trace a marked molecule of blood from the heart, through the kidneys, and back to the heart. List all blood vessels traversed by the marked molecule. Your trace should be in the form of a columnar list in the space below.

3. (7 points) Label all the muscles in the illustration and answer the questions below. What is the common attachment and what is the common action of this group of muscles?

What is the common action for this group?

What is the common attachment for this group?

Which two muscles in this group are not visible in the illustration?
4. **(10 points)** On the illustration below, label all of the structures that are associated with the hair follicle and fill in the table below.

![Illustration of a hair follicle](image_url)

<table>
<thead>
<tr>
<th>Structure/layer</th>
<th>Tissue</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. **(10 points)** On the diagram below clearly draw and label both sympathetic and parasympathetic reflexes associated with the visceral organs in the illustration. All neurons, cell bodies, and synapses must be drawn in their correct locations or they will be marked wrong.

Which organs of the gut are represented in the illustration above? What evidence, visible in the illustration, supports your answer?
6. **(15 points)** In the space below draw and completely label the brachial plexus. Below your drawing list all the muscles by name that would be completely paralyzed and any joint movements which would be weakened if the lateral cord were cut at its proximal most point.

| Paralyzed muscles | Weak joint movements |
7. **(10 points)** Label all the numbered thoracic veins evident in the illustration below.

1. ______________________
2. ______________________
3. ______________________
4. ______________________
5. ______________________
6. ______________________
7. ______________________
8. ______________________
9. ______________________
10. _____________________

8. **(8 points)** Trace indigestible fiber (not absorbed) from food on your fork, through the digestive passageways, and back out into the environment. Your trace should be a list of columnar structures in the space below.
9. (20 points) Place the name of each numbered muscle in the blanks to the left of the illustration and answer the questions below. Using a color pencil, draw the boundaries of the femoral triangle on the illustration to the left.

1. __________________________
2. __________________________
3. __________________________
4. __________________________
5. __________________________
6. __________________________
7. __________________________
8. __________________________
9. __________________________
10. __________________________
11. __________________________
12. __________________________

Which numbered muscles attach medial to the tibial tuberosity?

Which numbered muscles are innervated by the femoral nerve?

Which numbered muscles do extension of the knee?

What structures are located in the femoral triangle?
10. (16 points) The illustration below depicts a transverse section through the embryonic vertebrate trunk and therefore represents the basic design of both the thorax and abdomen. Color code the muscle layers in the illustration. Not realizing that there was a developmental pattern to the vertebrate trunk, anatomists gave names to structures reflecting the region instead of the pattern. In the spaces below, write the regional name given to each of the numbered adult structures that arise from this basic pattern of design of the vertebrate trunk.

- Subvertebral
- Lateral, outermost
- Lateral, external
- Lateral, middle
- Lateral, internal
- Ventral

<table>
<thead>
<tr>
<th>Thorax</th>
<th>Abdomen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>
11. (10 points) Trace the pathway of light from the room you are in to the visual cortex.

Light in room

Visual cortex
12. **(4 points)** Label all the arteries in the illustration below. Circle the number of the artery associated with the pelvic body wall pattern.

1. __________________ 
2. __________________ 
3. __________________ 
4. __________________ 
5. __________________ 
6. __________________ 
7. __________________