## **Homework 4 - A tree of Ornithischians**

Listed are 9 monophyletic groups and 18 shared, derived characteristics. Determine which groups have which shared derived characteristics. On the next sheet of paper, draw a cladogram with BOTH monophyletic groups and at what points on the cladogram the listed characteristics arise.

## USE THE TREES FROM CLASS AND YOUR BOOK!

Scan the cladogram with groups and traits clearly labeled and submit to Catcourses.

Example

**Ankylosaurids Archosauria** Group 3 **Vertebrata** Group 4 Trait c **Dinosauria** Trait d Group 2 **Nodosaurids** Trait b Marginocephalia Trait a **Ornithischia** Group 1 **Pachycephalosauria** Stegosauria

Ossified tendons at end of tail Overhanging shelf on back of Rows of plates and spines Perferated acetabulum vertebrae Deep-set cheek teeth skull roof Opisthopubic pelvis Ridges/Grooves on **Bilateral symmetry** Antorbital fenestra Crest on humerus Low jaw joint Tall thoracic **Thickened Predentary** Backbone Tail Club **Draw the Cladogram Here**