MT-A141 Precalculus Worksheet 6.1

Group: _____ Present: _____

1. Find (a) a negative angle coterminal with $\theta = 130°$: _____

   (b) an angle supplementary to $\theta = 130°$: _____

2. Complete the table of common angle equivalences (start thinking in radians!):

Degrees	$0°$	$30°$	$45°$	$60°$	$90°$	___	$135°$	$150°$	$180°$	$225°$	$270°$	$315°$	$360°$
Radians	0	___	___	___	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	___	___	___	___	___	___	___

3. Calculator Exercise. Set MODE to RADIANS (and **leave it there** most of the rest of the semester!). The calculator will accept input and give answers in radians. Angles can still be entered in degrees and interpreted correctly by the calculator, but be careful!:

   (i) Enter: 30 2nd ANGLE ° ENTER. What is the answer? _____

   (ii) Explain the results of the following two sequences of keystrokes:
   22.6 2nd ANGLE →DMS

   22.6 2nd ANGLE ° 2nd ANGLE →DMS

   (iii) To enter an angle in degrees, minutes and seconds:
   23 2nd ANGLE ′ 44 2nd ANGLE ′ 16 2nd ANGLE ′

   (iv) Change the calculator to DEGREE mode. What does: 1 2nd ANGLE r produce?

   Change the calculator back to RADIAN mode now!

4. Arc lengths. Suppose a truck wheel of radius 1.5 feet rolls 100 feet along a road.

   (a) Through what angle does the wheel turn? _____

   (b) How many revolutions is this? _____

   Suppose now the wheel turns at 500 revolutions per minute (rpm).

   (c) What is the angular speed of the wheel? _____

   (d) How fast is a point on the rim of the wheel moving? _____

   (e) How fast is the truck going? _____