Precalculus Test 1 Sections 4.1 and 4.3 Name _____

SHOW ALL WORK!

I. Multiple Choice

_____ 1. Determine the quadrant in which the terminal side of an angle of 215º lies.
(A) I (B) II (C) III (D) IV
(E) The terminal side lies on one of the axes

_____ 2. Convert 25º to radians.
(A) $\frac{5\pi}{36}$ (B) $\frac{36}{5\pi}$ (C) $\frac{4500}{\pi}$ (D) $\frac{5\pi}{18}$ (E) None of these

_____ 3. Convert $\frac{3\pi}{5}$ radians to degrees.
(A) 0.0329º (B) 108º (C) 216º (D) 54º (E) None of these

_____ 4. Determine which angle is coterminal to $\theta = -\frac{7\pi}{12}$.
(A) $\frac{5\pi}{12}$ (B) $\frac{17\pi}{12}$ (C) $-\frac{19\pi}{12}$ (D) Both A and C
(E) None of these

_____ 5. Determine which of the following angles is supplementary to $\theta = \frac{2\pi}{5}$.
(A) $\frac{3\pi}{5}$ (B) $\frac{3\pi}{10}$ (C) $\frac{7\pi}{5}$ (D) $-\frac{8\pi}{5}$ (E) None of these

_____ 6. Simplify completely: $\frac{4}{\sqrt{10}}$

(A) $2\sqrt{10}$ (B) $\frac{\sqrt{10}}{10}$ (C) $\frac{2\sqrt{10}}{5}$ (D) $\frac{2\sqrt{5}}{5}$ (E) None of these

_____ 7. Determine the tan 30˚ by constructing an appropriate triangle:

(A) $\frac{1}{2}$ (B) $\sqrt{3}$ (C) $\frac{\sqrt{3}}{2}$ (D) $\frac{\sqrt{3}}{3}$ (E) None of these

_____ 8. Use a calculator to determine the cos (33˚):

(A) -.0133 (B) .8387 (C) .5446 (D) 1.5398 (E) None of these

_____ 9. Use a calculator to determine the csc(1.32)

(A) 2.0132 (B) 1.0323 (C) 0.0230 (D) 0.6872 (E) None of these

_____ 10. Given that sec θ = 5, determine the exact value of csc (90° - θ):

(A) $\frac{5\sqrt{6}}{12}$ (B) 5 (C) $\frac{1}{5}$ (D) $\frac{2\sqrt{6}}{5}$ (E) None of these

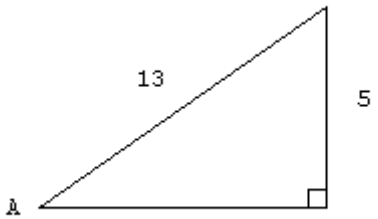
II. Free Response (Do on your own paper showing all work)

11. A bicycle wheel with an 18 inch diameter rotates 100˚. What distance has the bicycle traveled?

12. Convert 178.463° to degrees, minutes, and seconds.

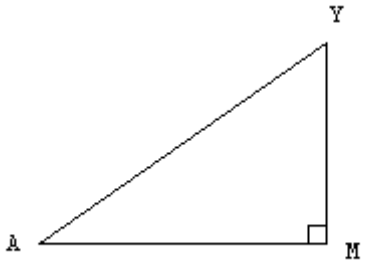
13. Given a right triangle $\triangle ABC$ where $m\angle C = 90°$ and AB = 7 inches and BC = 4 inches. Determine the value of cot $\angle A$.

14. In the diagram at the right, determine the exact values of the six trigonometric ratios:



sin A =
cos A =
tan A =
cot A =
sec A =
csc A =

15. Find the length of segment MA in the diagram at the right, given that $m\angle A = 26°$ and AY = 12 inches. (You will need a calculator)



16. Determine the exact value of cos(45˚) by constructing an appropriate triangle.