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 395º lies.
(A) I (B) II (C) III (D) IV
(E) The terminal side lies on one of the axes

_____ 2. Convert 240º to radians.
(A) $\frac{3\pi}{4}$ (B) $\frac{43,200}{\pi}$ (C) $\frac{3\pi}{2}$ (D) $\frac{4\pi}{3}$ (E) None of these

_____ 3. Convert $\frac{5\pi}{12}$ radians to degrees.
(A) 82º (B) 150º (C) 36º (D) 75º (E) None of these

_____ 4. Determine which angle is coterminal to $\theta = -\frac{5\pi}{6}$.
(A) $\frac{5\pi}{6}$ (B) $\frac{7\pi}{6}$ (C) $\frac{\pi}{6}$ (D) $\frac{11\pi}{6}$ (E) None of these

_____ 5. Determine which of the following angles is complementary to $\theta = \frac{2\pi}{7}$.
(A) $\frac{5\pi}{7}$ (B) $\frac{16\pi}{7}$ (C) $-\frac{10\pi}{7}$ (D) $\frac{3\pi}{14}$ (E) None of these

_____ 6. Simplify completely: $\sqrt{\frac{3}{5}}$

(A) $\frac{\sqrt{3}}{5}$ (B) $\frac{\sqrt{5}}{5}$ (C) $\frac{\sqrt{15}}{5}$ (D) $\sqrt{15}$ (E) None of these

_____ 7. Determine the cos 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 tan (33˚):

(A) –75.313 (B) .6494 (C) .5446 (D) 1.5398 (E) None of these

_____ 9. Use a calculator to determine the sec(1.2)

(A) 0.6724 (B) 1.0002 (C) 2.7597 (D) 0.9999 (E) None of these

_____ 10. Given that cos θ = ½, determine the exact value of csc (90° - θ):

(A) 2 (B) ½ (C) $\sqrt{3}$ (D) $\frac{2\sqrt{3}}{3}$ (E) None of these

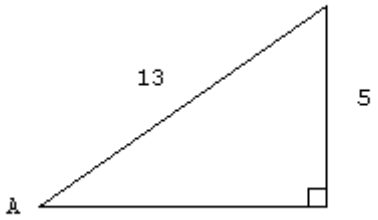
II. Free Response (Do on your own paper showing all work)

11. A bicycle wheel with an 18 inch diameter rotates 120˚. What distance has the bicycle traveled?

12. Convert 128˚ 35' 18" to (degree) decimal form.

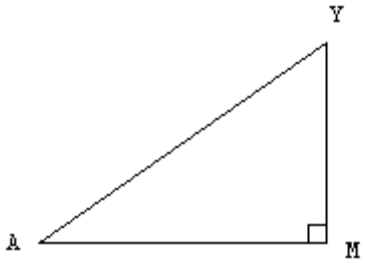
13. Given a right triangle $\triangle ABC$ where $m\angle C = 90°$ and AB = 5 inches and BC = 2 inches. Determine the value of tan $\angle A$.

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



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