

Math 104 Practice Test 4

1. Find the exact value of  $\tan 12^\circ - \cot 78^\circ$
2. Solve the right triangle:  $b = 6$ ,  $A = 20^\circ$ .
3. A guy wire 80 feet long is attached to the top of a radio transmission tower, making an angle of  $68^\circ$  with the ground. How high is the tower?
4. Solve the triangle:  $A = 70^\circ$ ,  $B = 40^\circ$ ,  $c = 2$ ,
5. Solve any triangles that exist with  $B = 40^\circ$ ,  $b = 2$ ,  $c = 3$ .
6. Find the area of a triangle with  $a = 6$ ,  $b = 7$ , and  $C = 60^\circ$ .
7. Convert from polar to rectangular coordinates:  $(5, 300^\circ)$ .
8. Convert from rectangular to polar coordinates:  $(2, -2)$ .
9. Rewrite using polar coordinates:  $x^2 + y^2 = x$ .
10. Graph in polar coordinates:
  - a.  $r = 3\sin(2\theta)$ .
  - b.  $r = 5\csc\theta$
  - c.  $r = 3 - 4\cos\theta$