**Pre-calculus 4:4,8 Review Sheet** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour: \_\_\_\_

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| 1. Evaluate:  | 2. Let θ be an angle in standard position, name the quadrant in which θ lies. When cosθ<0 and cot θ>0. |
| 3-7. Given , and 90°<θ<180°. Find the exact value of the remaining five trigonometric functions. |
| 8-9. Find a reference angle for cot(-210°), and then evaluate using the reference angle.  | 10-11. Find a reference angle for , and then evaluate using the reference angle.  |
| 12-13. A tower that is 124 feet tall casts a shadow 172 feet long. Find the angle of elevation of the sun to the nearest degree. | 14-15. At a certain time of day, the angle of elevation of the sun is 40◦. To the nearest foot, find the height of a tree whose shadow is 35 feet long. |
| 16-17. A hot air balloon is rising vertically. From a point on level ground 125 feet from the point directly under the passenger compartment, the angle of elevation to the balloon changes from 19.2◦ to 31.7◦. How far, to the nearest tenth of a foot, does the balloon rise during this period? | 18-19. You leave your house and run 2 miles due west followed by 1.5 miles due north. At that time what is your bearing from your house? |
| 20-22. A jet leaves a runway whose bearing is N35E from the control tower. After flying 5 miles, the jet turns 90 and flies on a bearing of S55◦E for 7 miles. At that time, what is the bearing of the jet from the control tower? | 23-25. Two lighthouses are located on the north-south line. From lighthouse A the bearing of a ship 2500 meters away is $S55°W$. From lighthouse B the bearing of the ship is $N35°W$. Find the distance between the two lighthouses. |
| The navigator of a ship on a N44°E course sights a buoy with a bearing of S46°E. After the ship sails 15 km along the same course, the navigator sights the same buoy with a bearing S12°E. Find the distance between the ship and the buoy at the time of each sighting. |