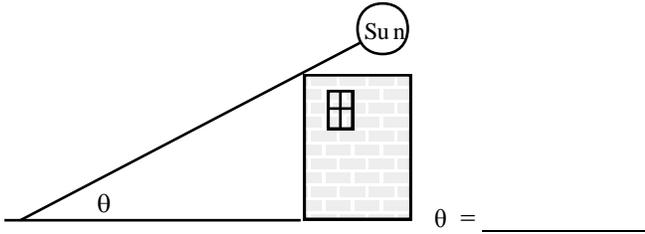
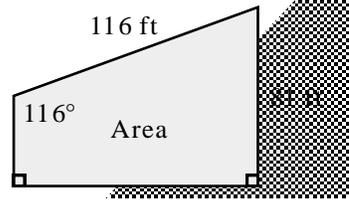


Perform your work on separate paper as necessary. Write your answers on this page. Answers must be **circled** and clearly **legible**. Use **two decimal accuracy** for approximate values. **Units** required. 20 pts

- 1) A 64 ft tall building casts a 110 ft shadow on the ground. Find θ .

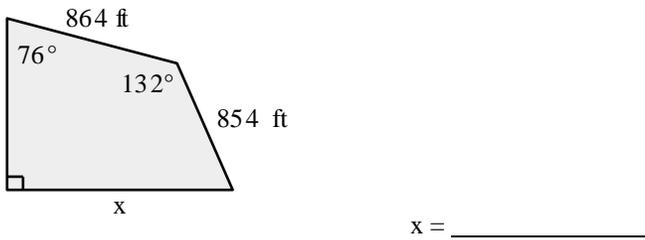


- 2) Find the Area.

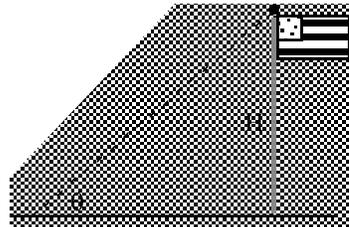


Area = _____

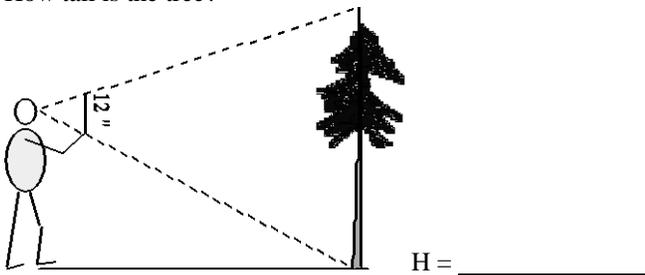
- 3) Find x.



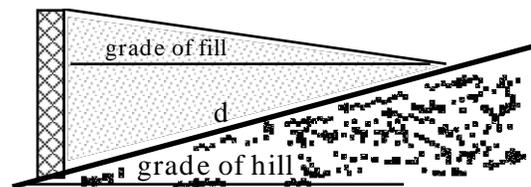
- 4) Find the height of the flag pole given an angle of $\theta = 47^\circ$ measured 54 ft from the base of the pole.



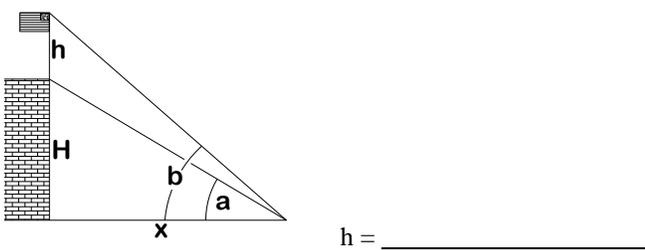
- 5) Joe stands 65 ft from a tree and holds a ruler 18" from his eye. How tall is the tree?



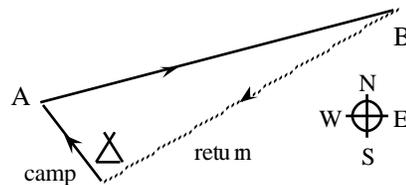
- 6) A 12 ft retaining wall is erected on a hill with a 20% grade. The fill is to be graded at 12%. Find d, where the fill meets the hill.



- 7) Find h. $x = 150$ m, $a = 66.8^\circ$, $b = 68.7^\circ$.

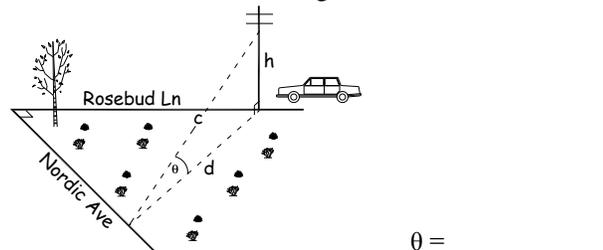


- 8) Billy hikes from Camp to pt A bearing $N 50^\circ W$ for 650', then turns and hikes to pt B bearing $N 75^\circ E$ for 2,000'. How far is it back to camp? What direction should he travel?

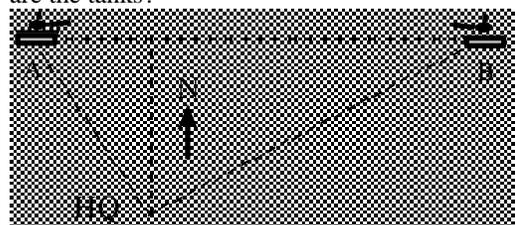


Distance = _____ Bearing = _____

- 9) A utility pole is located on Rosebud Ln, 200' from the corner of Nordic and Rosebud. A cable is attached 40' up the pole and anchored on Nordic, 180' from the corner. What angle does the cable make with the ground?



- 10) Tank A is 4 mi from HQ at bearing $N 33^\circ W$. Tank B is 8 miles from HQ and due East from Tank A. How far apart are the tanks?



Distance = _____