

Name: _____ Date: _____ Period: _____

Geometry: Open Response (Similar Triangles and Indirect Measurement)

1. To determine the height of a very tall pine tree, Aaron places a mirror on the ground and stands where he can see the top of the tree as shown. Aaron is 6 ft. tall and the mirror is 2 ft. from him on the ground when he is able to see the top of the tree.

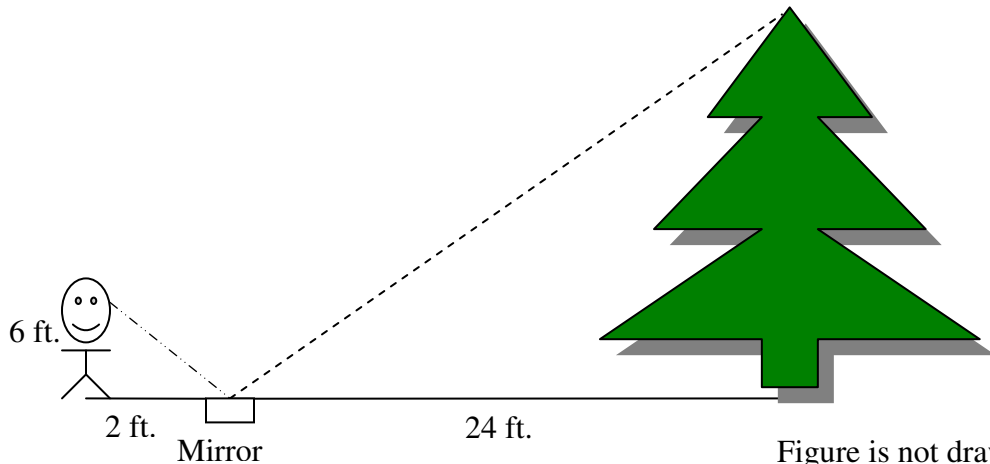
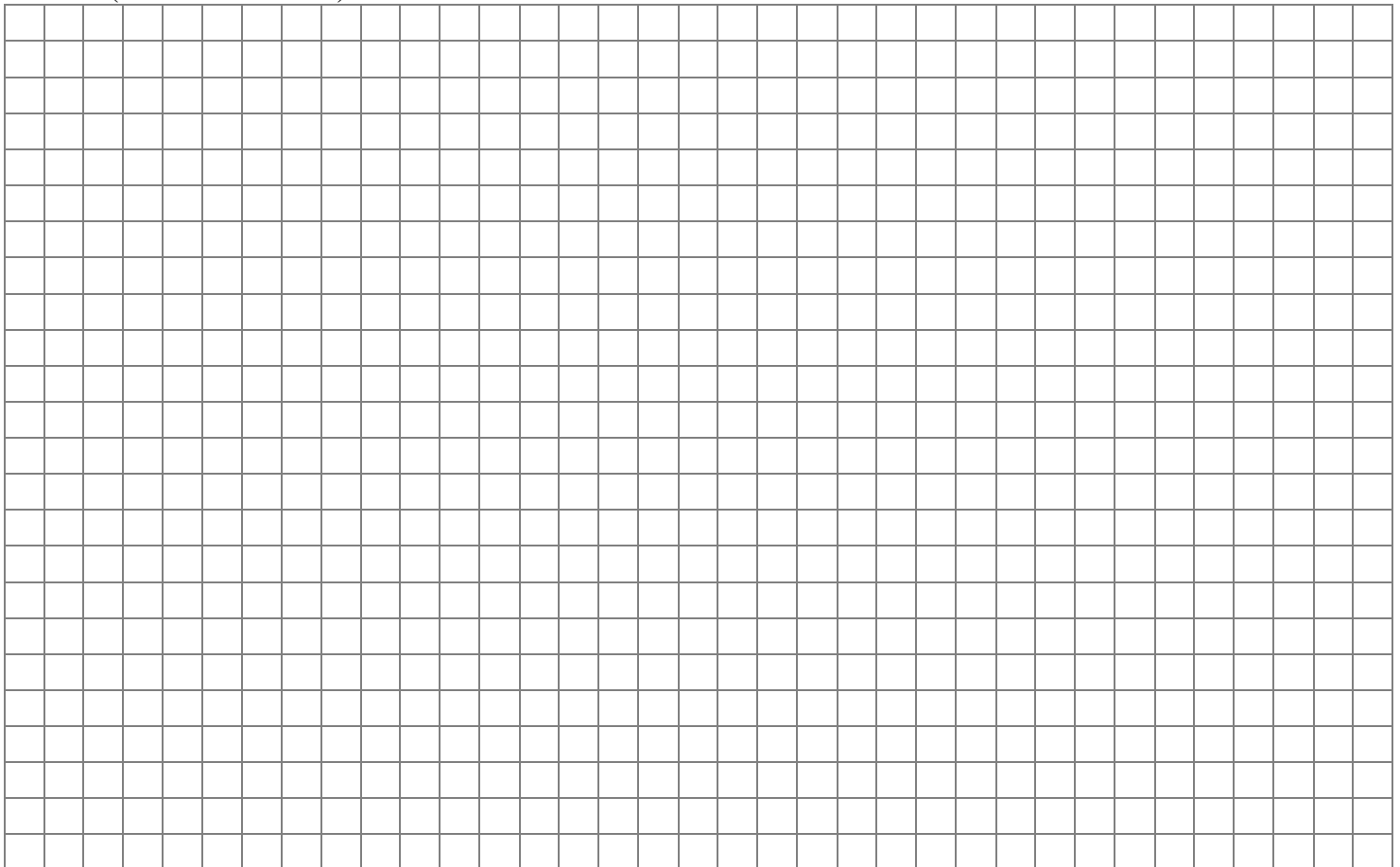


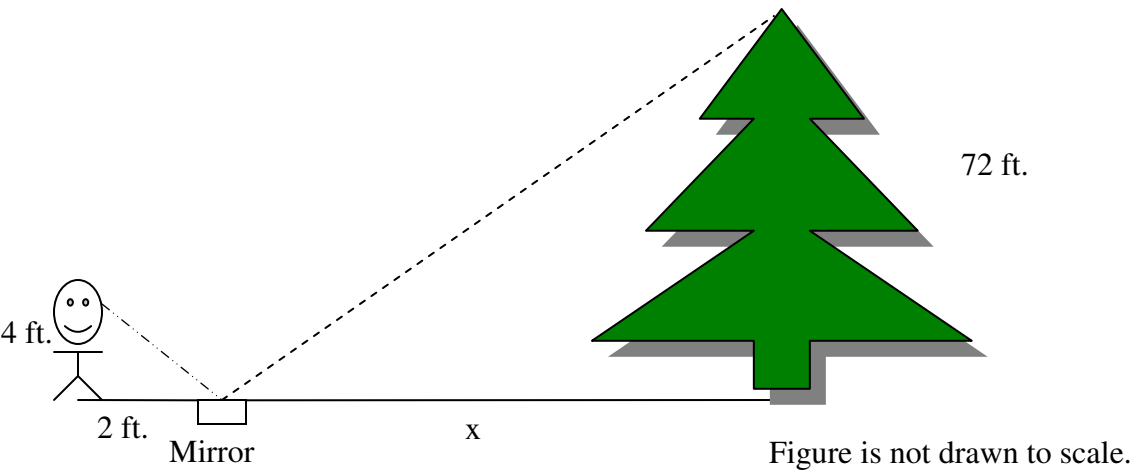
Figure is not drawn to scale.

- How tall is the tree? (With correct units)
- What is the distance from the mirror to the top of the tree? (With correct units to the nearest foot.)
- Now that Aaron knows the height of the tree, his little sister Amber wants to see the top of the tree also. However, she is only 4 feet tall. So she moves the mirror further away from the tree, but leaves the mirror 2 feet from her feet. Draw and label a picture representing this situation.
- How far from the base of the tree should Amber place the mirror in order to see the top of the tree? (With correct units)



Grading Rubric:

- a) 2 points total:
 - 1 point for correct answer of 72
 - 1 point for correct units feet
- b) 2 points total:
 - 1 point for correct answer 68 (rounded from 67.88225099)
 - 1 point for correct units feet
- c) 2 points total
 - Correct drawing
 - Correct units feet



- d) 2 points total
 - 1 point for correct answer of 36
 - 1 point for correct units feet

Score	Points Scored
4	Student scores 7-8 points
3	Student scores 5-6 points
2	Student scores 3-4 points
1	Student scores 1-2 points
0	Student scores 0 points