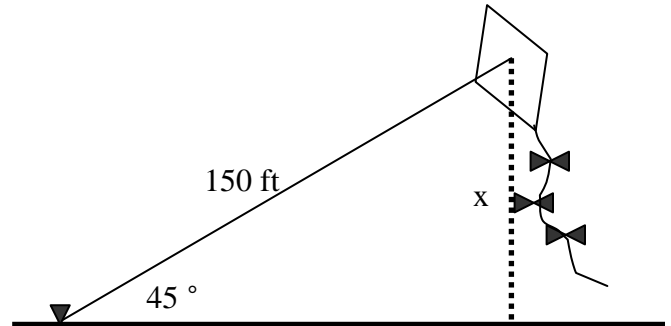


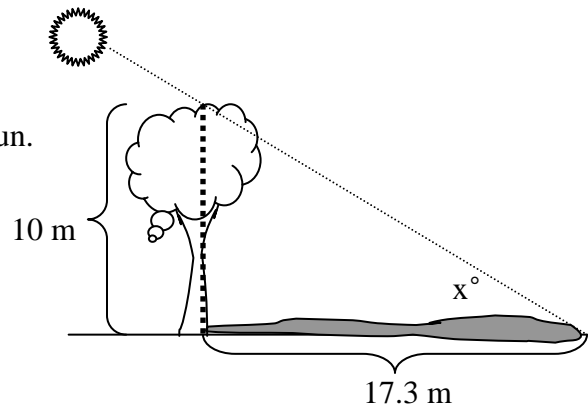
Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

### Worksheet – Angles of Depression and Elevation

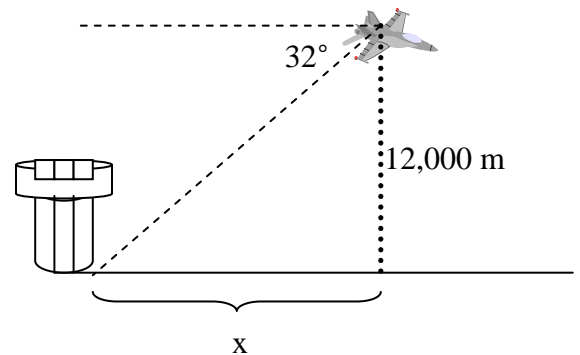
- 1) A kite with a string 150 feet long makes an angle of  $45^\circ$  with the ground. Assuming the string is straight, how high is the kite?



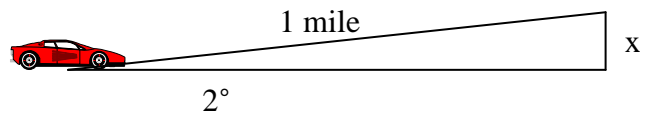
- 2) A tree 10 meters high casts a 17.3 meter shadow. Find the angle of elevation of the sun.

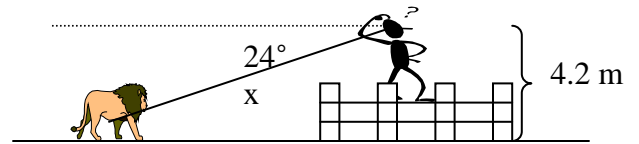


- 3) A plane is flying at an altitude of 12,000 m. From the pilot, the angle of depression to the airport tower is  $32^\circ$ . How far is the tower from a point directly beneath the plane?



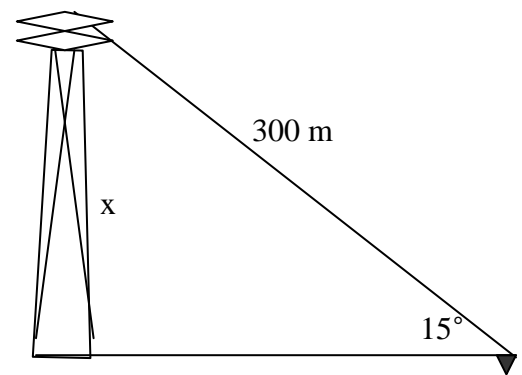
- 4) A car is traveling up a slight grade with an angle of elevation of  $2^\circ$ . After traveling 1 mile, what is the vertical change in feet? (1 mile = 5,280 ft)



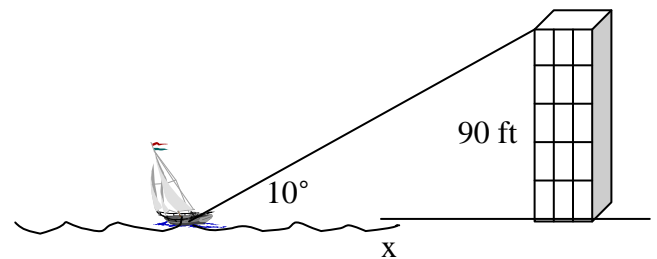


- 5) From the top of a fence, a person sites a lion on the ground at an angle of depression of  $24^\circ$ . If the man and the fence is 4.2 meters high, how far is the man from the lion?

- 6) A 300 m cable is attached to the top of an antenna. The angle of elevation to the top of the antenna is  $15^\circ$ . How high is the antenna?

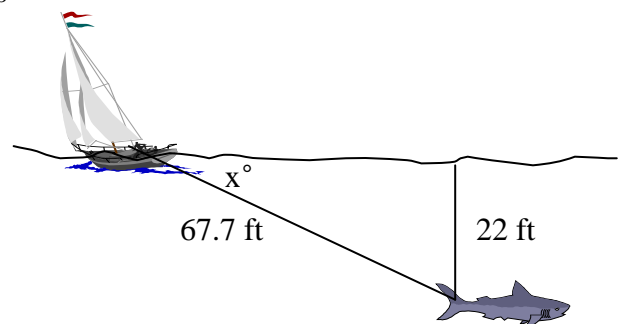


- 7) The angle of elevation from a boat to the top of a 90 meter hotel is  $10^\circ$ . How far is the boat from the base of the hotel?

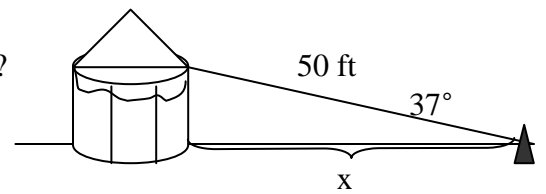


- 8) A great white shark swims 22 feet below sea level. If the shark is 67.7 feet from the sailboat, what is

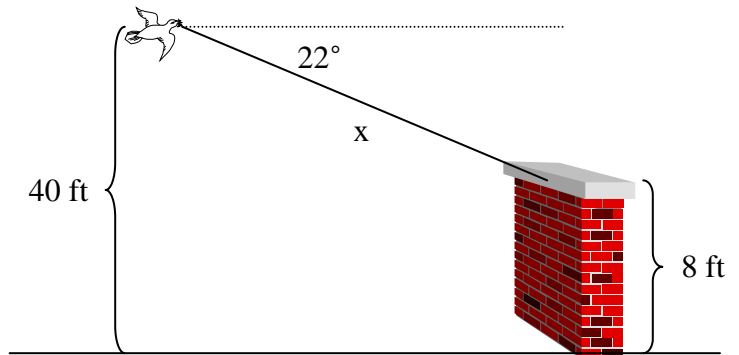
the angle of depression of the boat to the shark?



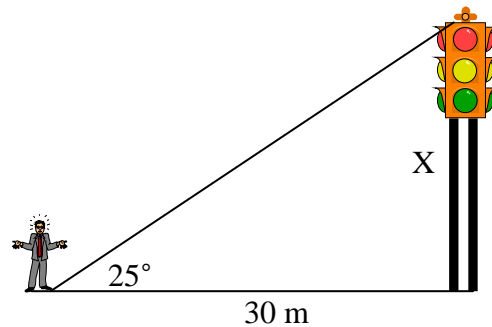
- 9) If a 50 foot cable supporting a circus tent is staked into the ground at an angle of elevation of  $37^\circ$ , how far from the tent must the stake be placed?



- 10) A bird is flying at a height of 40 feet and spots an 8-ft ledge on which to perch. If the top of the ledge is at a  $22^\circ$  angle of depression from the bird, how far must the bird fly before it can land? (Careful!)



- 11) A person is standing 30 meters from a traffic light. If the angle of elevation from the person's feet to the top of the traffic light is  $25^\circ$ , find the height of the traffic light.



- 12) A 12 meter ladder is inclined against a brick wall at an angle of  $15^\circ$ . If the top of the ladder reaches the top of the wall, how tall is the wall?

