WS #28
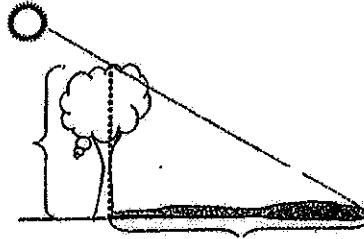
1. A kite with a string 150 feet long makes an angle of 45° with the ground. Assuming the string is straight, how high is the kite?
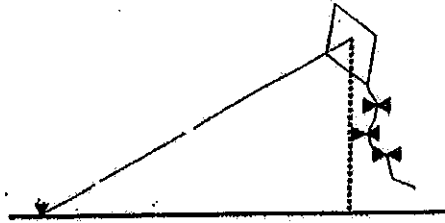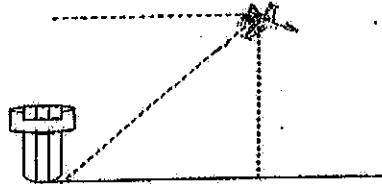
2. A tree 10 meters high casts a 17.3 meter shadow. Find the angle of elevation of the sun.

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°. How far is the tower from a point directly beneath the plane?
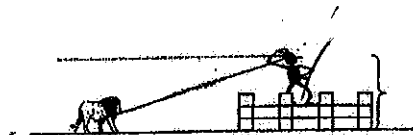
4. A car is traveling up a slight grade with an angle of elevation of 2°. After traveling 1 mile, what is the vertical change in feet? (1 mile = 5,280 ft)
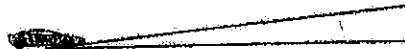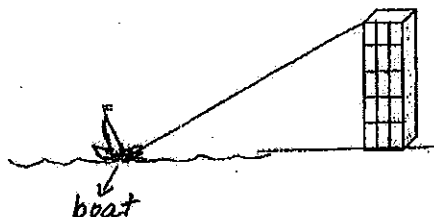
5. From the top of a fence, a person sites a lion on the ground at an angle of depression of 24°. If the man and the fence is 4.2 meters high, how far is the man from the lion?
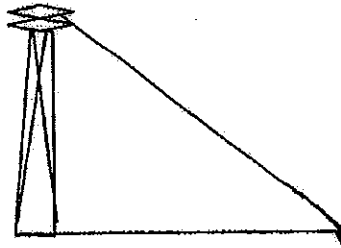
6. The angle of elevation from a boat to the top of a 90 meter hotel is 10°. How far is the boat from the base of the hotel?
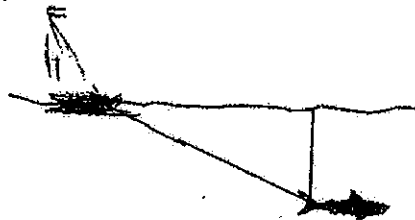
boat

7 A 300 m cable is attached to the top of an antenna. The angle of elevation to the top of the antenna is 15°. How high is the antenna?

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°, 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° angle of depression from the bird, how far must the bird fly before it can land? (Careful!)
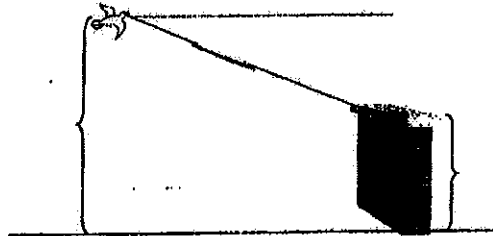
11 A person is standing 30 meters from a traffic light. If the angle of elevation from the person's feet to the top of the traffic light

is 25°, find the height of the traffic light.
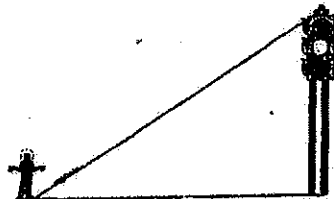
12 A 12 meter ladder is inclined against a brick wall at an angle of 15°. If the top of the ladder reaches the top of the wall, how tall is the wall?