Trig Word Problems #reallifemath

There are 10 possible problems, therefore there is the possibility of 80 possible points.. You will receive 8 points for every correct problem.
The point break down is 2 points for diagram, 2 points for function/fraction and 4 points for the correct answer. This assignment will be out **of 64 total points**. You do not have to go in order you can pick and choose what you like.

Word Problem	Diagram	Work	Points
1. Suppose you have been assigned to measure the height of the local water tower. Climbing makes you dizzy, so you decide to do the whole job at ground level. From a point 47 meters from the base of the water tower, you find that you must look up at an angle of 53° to see the top of the tower. How tall is the tower?			D F/F C.A Total
2. You lean a ladder 7 meters long against the wall. It makes an angle of 63° with the level ground. How high up is the top of the ladder?			D F/F C.A Total

Word Problem	Diagram	Work	Points
3. You must order a new rope for the flagpole. To find out what length of rope is needed, you observe that pole casts a shadow 11 meters long on the ground. The angle between the suns rays and the ground is 36°. How tall is the pole?			D F/F C.A Total
4. Your cat is trapped on a tree branch 5 meters above the ground. Your ladder is only 7 meters long. If you place the ladder's tip on the branch, what angle will the ladder make with the ground?			D F/F C.A Total
5. The tallest freestanding structure in the world is the 553 meter tall CN tower in Toronto, Ontario. Suppose that at a certain time of day it casts a shadow 1100 meters long on the ground. What is the angle of elevation of the sun at that time of day?			D F/F C.A Total

Word Problem	Diagram	Work	Points
6. A beam of gamma rays is to be used to treat a tumor known to be 6 cm beneath the patient's skin. To avoid damaging a vital organ, the radiologist moves the source over 8 cm. At what angle to the patient's skin must the radiologist aim the gamma ray source to hit the tumor?			D F/F C.A Total
7. When surveyors measure land that slopes significantly, the distance which is measured will be longer than the horizontal distance which must be drawn on a map. Suppose that the distance from the top edge of the Okapilco Creek bed to the edge of the water is 37 meters. The land slopes downward at 27° to the horizontal. What is the horizontal distance from the top of the banks to the edge of the creek?			D F/F C.A Total
8. A submarine at the surface of the ocean makes an emergency dive, its path making an angle of 21° with the surface. If it goes for 300 meters along its downward path, how deep will it be?			D F/F C.A Total

Word Problem	Diagram	Work	Points
9. An observer 5 kilometers from the launch pad observes a missile ascending. At a particular, the angle of elevation is 37°. How high is the missile?			D F/F C.A Total
10. Suppose that you are on a salvage ship in the Gulf of Mexico. Your sonar system has located a sunken Spanish galleon at a slant distance of 683 meters from your ship, with an angle to the horizontal of 27° How deep is the water at the galleon's location?			D F/F C.A Total
BONUS Ms. B is standing 64 inches tall (she's wearing heels) If the angle of depression from her to a student texting on his phone trying to be slick and hiding it by the seat of his chair is 22° how far is Ms. B from this student.			D F/F C.A Total