Integrated Algebra Practice: A.A.44 #3

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NAME:_____

P.I. A.A.44: Find the measure of a side of a right triangle, given an acute angle and the length of another side

1. To find the height of a pole, a surveyor moves 80 feet away from the base of the pole and then, with a transit 4 feet tall, measures the angle of elevation to the top of the pole to be $57°$. What is the height of the pole? Round answer to the nearest foot.

   [A] 52 ft [B] 56 ft

   [C] 127 ft [D] 123 ft

2. To find the height of a pole, a surveyor moves 190 feet away from the base of the pole and then, with a transit 4 feet tall, measures the angle of elevation to the top of the pole to be $60°$. What is the height of the pole? Round answer to the nearest foot.

   [A] 110 ft [B] 329 ft

   [C] 333 ft [D] 114 ft

3. An airplane over the Pacific sights an atoll at a 11° angle of depression. If the plane is 500 m above water, how many kilometers is it from a point 500 m above the atoll?

4. An airplane over the Pacific sights an atoll at a 17° angle of depression. If the plane is 445 m above water, how many kilometers is it from a point 445 m above the atoll?

5. A lookout spots a fire from a 32 meter tower. The angle of depression from the tower to the fire is 13 degrees. To the nearest meter, how far is the fire from the base of the tower?

6. A lookout spots a fire from a 36 meter tower. The angle of depression from the tower to the fire is 22 degrees. To the nearest meter, how far is the fire from the base of the tower?

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[1] C

[2] C

[3] 2.57 km

[4] 1.46 km

[5] 139 meters

[6] 89 meters