

Activity 5 - Math Questions (9th -12th grades)

Write the answers to the math questions in the provided blanks. Round each answer to two decimal places.

1. CAP regularly stocks white amurs or "grass carps." CAP has a license with AZ Game and Fish to stock these fish. These fish are sterile and will not reproduce. We typically stock \$100,000 worth of grass carp every year. If each fish costs an average of \$5 how many fish will CAP stock over a three year period?

2. The CAP canal moves water at a flow rate of 3,000 cubic feet per second. There are 7.48 gallons in a cubic foot of water. How many gallons of water flow through CAP per second?

3. The CAP canal moves 1,346,400 gallons of water per minute. A local fishing pond holds 807,840 gallons. How long will it take to fill the pond in seconds?

4. CAP measures water in acre-feet. An acre-foot is equal to one foot of water spread over an entire acre of land. This results in 43,560 cubic feet of water in an acre-foot. If there 7.48 gallons in a cubic foot of water, how many gallons are in five acre-feet?

5. Central Arizona Project's water canal slopes an average of .00008 feet per foot. With 5280 feet in a mile, calculate the average drop of the slope in feet over the span of 100 miles.

6. Arizona is allotted 2.8 million acre-feet of the Colorado River each year. 560,000 acres are irrigated and 3.08 million are served by this water. It represents only 32 percent of the water needed by the state in one year. How much water, in millions of acre-feet, does Arizona require annually?

7. CAP is a partner in a cloud seeding test program. The project involves generators blowing silver iodine, which is a nucleating agent, into clouds. When winter storms pass over the mountain ranges, silver iodine from ground-based generators placed 8,000 feet above sea level can reach the moisture-rich clouds. If this is done at the ideal altitude and temperature, the moisture in the clouds will produce snow more efficiently because of the addition of silver iodine, causing more snow to fall, and increasing the snow pack. Previous testing shows that the increase in snow production can create a 5-10% increase in the runoff. If the increased runoff is at its minimum (5%) and the normal runoff is 15 million acre-feet of water, how many millions of acre-feet of runoff will be measured?

8. Many daily activities require Arizona families to use water. Knowing and understanding water usage can aid in water conservation activities. For instance, the average shower requires 12 gallons of water while the average dishwasher requires 8 gallons per use. Washing a car uses an average of 50 gallons of water while watering your yard averages 80 gallons. If one Arizona family took 28 showers per week, washed 5 loads of dishes, washed a car 1 time, and watered their yard 4 times, how many gallons of water would they have used?
