

Pesticide Safety Education
Math Questions

- 1) How many acres are in an area 3.5 miles long by 30 feet wide?

- 2) To calibrate your backpack sprayer, you measure the swath of the nozzle pattern at 22 inches and after walking 200 feet you used three-quarters of a gallon of water. What is your application rate in gallons per acre?

- 3) A sprayer is calibrated to apply 25 gallons per acre @ 7 miles per hour. If the sprayer speeds up to 10 mph, but the nozzle and pressure are unchanged what will the application be?

- 4) How many pounds of a 50% (0.50) active ingredient granular product will it take to treat a 1.75-acre lawn when the label recommends 2 pounds of active ingredient per acre for the pest you are targeting?

- 5) A 20-gallon sprayer dispenses 3 gallons over 500 square feet. At the same calibration, how many square feet can you cover with one full tank?

- 6) Directions on a pesticide label say to add 2 pints to 50 gallons of water. How many ounces of pesticide would you add to make 3 gallons of solution?

- 7) An herbicide label recommends 4 pints of product per acre. How many gallons of product will be needed to spray 4.5 acres?

- 8) A sprayer with a 350-gallon tank is calibrated at 12 gpa. An herbicide label recommends 2 quarts of product per acre. How many gallons of product will be added to a full tank?

- 9) You collect 4.5 pounds of product from your 24-foot wide granular drop spreader after traveling 400 feet. What is your application rate in pounds per acre?

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10) You measure that your equipment applied 45 ounces of water in a test course 200 feet long with a 3-foot wide spray pattern. What is your calibration in gallons per acre?

11) An herbicide label instructs you to use a 5% solution for spot spraying perennial weeds. How many ounces of product would you add to make a total of 1 gallon of spray solution?

12) A product label instructs you to use 2 ounces of product per 1,000 square feet. The property you plan to spray is 9.5 acres. How many gallons of product will you need for your application?

13) A sprayer is calibrated to deliver 12 gallons per acre at 32 psi and a travel speed of 6 mph. Conditions do not allow for an increase in speed. To reduce your application rate to 6 gallons per acre, calculate the pressure to make this change?

14) A product label says to use 3 ounces per 1,000 square feet. How much product will you need for a 14,400 square foot area?

15) A product label prescribes 2 pounds per acre. How much is needed for a 9,600 square foot area?

16) An insecticide label instructs you to use 3 pints per acre for control of grasshoppers. How many ounces of product are needed to treat a 15,000 square foot area?

17) A dry flowable (DF) herbicide label recommends an application rate of 0.4 ounce in a minimum of 10 gallons of water per acre. How many pounds of product and gallons of water will be needed to spray an 80-acre field?

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18) How many gallons of product will you need to treat a 17-acre area when the label instructs you to use 3 ounces per 1,000 square feet?

19) You are hired to spray weeds along a 12.4-mile length of roadway, and the average width of the treatment area is 25 feet. The label on the product you will be using recommends an application rate of 6 quarts per acre. How many gallons of product will you need?

20) A product label states you should apply 1.5 pounds per acre for control of many broadleaf weeds. How many pounds of product will be needed to treat an area you have calculated to be 157,450 square feet?

21) An insecticide label recommends a 1:50 mixture for spraying barn walls for control of flies. How many ounces of product are needed to make 3 gallons of spray solution?

22) Your sprayer is calibrated at 15 gallons per acre. Your spray tank holds 300 gallons, and you want to mix a full tank with an herbicide that recommends a 1.5-pint per acre application rate. While maintaining a consistent calibration, how many gallons of herbicide will you need to make a full tank?

23) How many ounces of surfactant will be added to a 25-gallon batch of herbicide solution if the surfactant is used at 0.25% concentration by volume?

24) You have a 25 gallons sprayer on an ATV. During the calibration you determine it applied 2 gallons of water over a 2,000 square foot test area. How many square feet will a full tank cover?

25) While calibrating your backpack sprayer you maintain a constant walking speed and pressure of 25 psi. You have determined you walk 200 feet in 48

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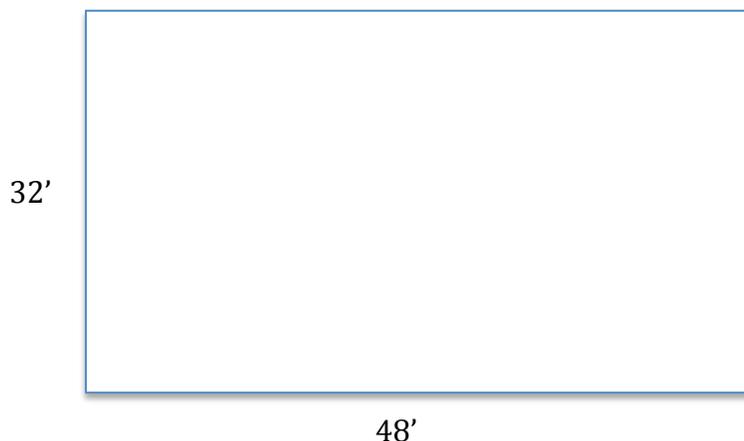
seconds and the nozzle pattern is 30 inches wide. At 25 psi you collect 6 ounces in 12 seconds. What is the application rate in gallons per 1,000 square feet?

26) A storage shed that measures 10 feet high, by 16 feet wide, and 24 feet long will be treated for flying insects. An aerosol pesticide instructs you to spray for two seconds per 1,000 cubic feet. How many seconds will it take to treat the shed?

27) You have been hired to do a broadcast herbicide application on a 10.5-mile stretch of right-of-way. You will be using a boomless nozzle that sprays a 24-foot pattern. At 6 mph and a pressure of 50 psi you have calibrated the sprayer at 36.4 gallons per acre (GPA). Your truck is equipped with a 1,200-gallon tank. The herbicide label recommends 3 quarts of product per acre. How many gallons of herbicide will be needed, and how many total gallons of spray solution will be applied?

28) An insecticide label recommends using 1 ounce of product to 1 gallon of water for control of carpet beetles and this solution be applied at the rate of 1 gallon/1,500 square feet. How many ounces of product will be needed to treat all the rooms in a two story house which is 32 feet wide and 48 feet long.

29) An insecticide label says to treat around the perimeter of a house with a 6ft wide band for termites. What would the total area be for a house that is 32ft wide by 48ft long?



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30) Determine the area of turf to be sprayed for weeds.

