2024 Louisiana FFA State Floriculture CDE Problem Solving Practicum

Instructions: *Below are five problems related to the floriculture industry. Use the information provided to select the best solution to each problem from the answer choices listed. Mark your answers in "Exam 2" on your scantron. Each problem is worth 10 points. You have 30 minutes to complete this practicum.*

1. A high school horticulture class is tasked with filling 200 6-inch pots in preparation for an upcoming shipment of petunia plugs. The potting mix being used comes in 3 cubic foot (ft³) bales. How many bales of potting mix must be purchased to fill these pots?

Pot Size (in)	Approximate Dimension Top x Depth x Bottom (in)	Number of Pots/ft³
	Standard Round Pots	
2¼	2¼ x 2¹/₁₆ x 1¾	256
2½	2⅜ x 2¼ x 2	208
3	3 x 2¹³/₁₆ x 2¼	120
3½	3⅜ x 3³/₁₀ x 2⅜	80
4	4 x 3⅞ x 2¾	48
4½	4⅜ x 4⅜ x 3	40
5	5 x 3½ x 4	28
5½	5½ x 5⅜ x 3¹³/₁₆	20
6	6 x 5¾ x 4¹/₁₆	16
7	6¾ x 7¾ x 4¹¹/₁₆	10
8	7⅝ x 7¾ x 5⅜	6
10	9⅞ x 9¾ x 6⅞	3

   a. 3
   b. 4
   c. 5
   d. 6
   e. None of the above

2. To purchase a heater for a newly constructed school quonset-style greenhouse, the cubic foot volume of the greenhouse must be known. Using the formula provided below, what is the cubic foot volume of a greenhouse where L=60 feet, W=20 feet, H_e=8 feet, and H_r=3 feet?

Greenhouse volume in cubic feet = [(H_e x W) + (W x H_r)/2] x L

Figure 1-C. Formula for calculating quonset greenhouse volume.

L = length
W = width
H_e = height form floor to eave
H_r = height from eave to top
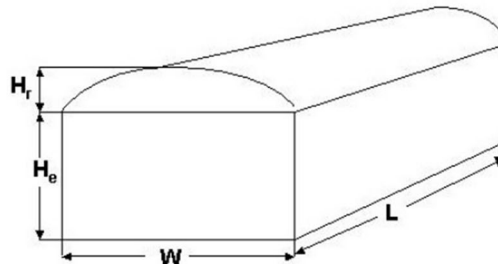
   a. 6,600 cubic feet (cf³)
   b. 11,400 cubic feet (cf³)
   c. 12,800 cubic feet (cf³)
   d. 13,900 cubic feet (cf³)
   e. 17,600 cubic feet (cf³)

3. A florist is preparing a Mother's Day order. The customer has ordered a popular arrangement consisting of dark pink roses and light pink oriental lilies. This shop calculates the total retail price of arrangements by adding up the wholesale cost of materials and multiplying by 3 to cover markup, labor, and local delivery. Using the materials list below, what would be the total retail price for this arrangement?

Quantity	Material	Wholesale Cost Per Unit
12	Dark Pink Rose	$1.19
12	Light Pink Oriental Lily	$1.29
1	#9 Satin Ribbon	$0.75
1	Vase	$4.50
1	Other Shop Supplies – Flat Fee	$1.50

a. $109.53
b. $89.28
c. $36.51
d. $73.02
e. $110.00

4. An Ag teacher is mixing an emulsion concentrate in a 5-gallon backpack sprayer. The pesticide being applied to the school's poinsettia crop provides a recommended rate of 3 pints of pesticide per 100 gallons of water. What would be the converted rate to use in the backpack sprayer?

Water 100 gal	Recommended Rate					
	½ pt	1 pt	2 pt	3 pt	4 pt	5 pt
50 gals	4 fl oz	8 fl oz	1 pt	1½ pt	2 pt	2½ pt
25 gals	2 fl oz	4 fl oz	8 fl oz	12 fl oz	1 pt	1¼ pt
12.5 gals	1 fl oz	2 fl oz	4 fl oz	6 fl oz	8 fl oz	10 fl oz
5 gals	1 tbs	1 fl oz	2 fl oz	2½ fl oz	3 fl oz	4 fl oz
1 gal	½ tsp	1 tsp	2 tsp	3 tsp	4 tsp	5 tsp

a. 1 tablespoon (tbs)
b. 1 fluid ounce (fl oz)
c. 2 fluid ounces (fl oz)
d. 2 ½ fluid ounces (fl oz)
e. 3 fluid ounces (fl oz)

5. An FFA chapter is planning a spring plant sale for Saturday, April 27th, 2024. They are buying 300 Vinca plugs from a company to be shipped in. The recommended crop time from plug planting to sale is 5-7 weeks. Based on the plug availability in the chart below, will the FFA chapter be able to obtain Vinca plugs from this company in time for the sale, and if so, what is the latest week they can schedule delivery to ensure the plugs have been growing at school for at least 6 full weeks?

Delivery Week	Number of Vinca Plugs Available
Week 10 (03/04/2024)	200
Week 11 (03/11/2024)	400
Week 12 (03/18/2024)	500
Week 13 (03/25/2024)	1,000
Week 14 (04/01/2024)	1,400

a. No, the FFA chapter will not be able to obtain enough plugs from this company before the sale
b. Yes, Week 10 is the latest week the chapter can order
c. Yes, Week 11 is the latest week the chapter can order
d. Yes, Week 12 is the latest week the chapter can order
e. Yes, Week 13 is the latest week the chapter can order