2005 FFA Floriculture Career Development Event
With Solutions

Problem One.

Based on the Fertilizer label provided, answer the following questions.

1. What is the percent Pottasium (K_20) found in this fertilizer

2. Noting the price of this fertilizer package, what is the actual cost of 1 Lb. of Nitrogen?

3. Using the fertilizer calculation formula provided, How many ounces of this fertilizer would be needed to make 50 gallons of a fertilizer solution that will have 200 ppm Nitrogen?

4. Three minor elements found in this fertilizer are:

A.
1. 19%
2. $1.48
3. 44.4 oz.
4. Nitrate, iron and zinc

B.
1. 12%
2. $7.76
3. 7 oz.
4. Copper, zinc and manganese

C.
1. 6%
2. $15.52
3. 1052.6 oz
4. Copper, magnesium and boron

D.
1. 15%
2. $12.29
3. 11.1 oz.
4. Potash, manganese and ammonium

The Correct choice is B. The fertilizer contains 19% N, 6% P (P_2O_5) and 12% K (K_20). Since the fertilizer is being sold in a 2 Lb. package, and the actual nitrogen content is 19%, the cost per pound is calculated as follows: 2 * .19 = 0.38 lbs. N per package. .38/2.95 = 1/x x=$7.76

The desired ppm is 200. Using the formula: (200/75)/.19 = 14.03 oz. fertilizer in 100 gal. 14.03/2 = 7 oz. fertilizer for 50 gal. fertilizer solution.

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Problem Two.

Your employer has received a shipment of 18 bunches of standard roses in assorted colors (25 roses per bunch) for sale in your shop. The wholesale florist charged your employer $207 for the 18 bunches. Your employer operates on a 3 to 1 markup on all merchandise you sell in your shop. Using the Retailers' Markup Chart, your employer asks you to determine how much to charge your customers for the roses per dozen and for each bloom. How much will you determine to price the roses per dozen and per bloom?

A. $22.08 per dozen; $1.84 per bloom

B. $34.20 per dozen; $2.85 per bloom

C. $16.56 per dozen; $1.38 per bloom

D. $33.12 per dozen; $2.76 per bloom

18 bunches of roses with 25 stems per bunch = 450 roses
$207/450 = $0.46 cost per stem
From the retail markup table, follow the line that starts with 0.46 wholesale cost per flower over to the column under the 300% (3 to 1) markup and get $22.08 or $1.84 per bloom.

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Problem Three.

Mr. Geno Thompson of Geno's Greenhouse is planning on growing Cineraria in 6" standard pots in one of his greenhouses. The greenhouse has 20 benches that are 5' wide and 24' long. Each plant will need 1.5 sq. ft. of growing space. The plants will be grown in Super Dave's Growing Media that comes in 3.8 cu. ft. bales and costs $18.00 per bale. Using the information provided.

1. How many 6" standard pots of Cineraria can be grown in the greenhouse described above?

2. Using the information found in the potting capacity table, how many bales of growing media will be needed to properly fill all the pots?

3. How much will it cost to purchase the growing media for this planting project?

A. 2400 pots, 45 bales of media, and a total cost of $810

B. 1600 pots, 24 bales of media and a total cost of $432

C. 1600 pots, 30 bales of media and a total cost of $540

D. 1800 pots, 34 bales of media and a total cost of $612

Each bench provides 120 sq. ft. so can accomodate 80 pots per bench. So, 20 benches will hold 1600 6" pots.

According to the table, each cubic foot of growing media should fill 14 6" pots.
1600/14 = 114.3 cu. ft. growing media needed.

The growing media comes in 3.8 cu. ft. bales so about 30 bales will be needed.

The bales cost $18 each for a total cost of $540

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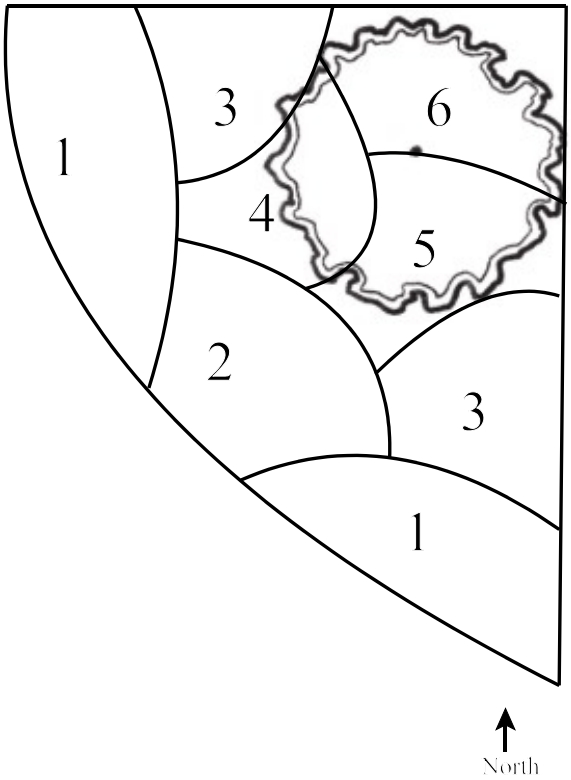
Problem Four.

Situation:

You work for Dee Bloom's Garden Center here in Eastern South Dakota. You visited with a client that came into the garden center with the map for a small corner flower bed, at left. The client is partial to blue, purple, lavender and white flowers but also likes plants with interesting foliage. You noted that there was a large deciduous tree in the NE corner of the bed. The bed measures about 25' along the north and east sides.

Use the information provided in Extension Extra 6017 to help you in deciding the best choice of plants for this garden.



A.
1 - *Achillea*
2 - *Rudbeckia hirta*
3 - *Dicentra spectabilis*
4 - *Iris hybrids*
5 - *Alcea rosea*
6 - *Hosta*

B.
1 - *Ajuga reptans*
2 - *Phlox subulata*
3 - *Veronica spicata*
4 - *Platycodon grandiflorus*
5 - *Hosta*
6 - *Mertensia virginica*

C.
1 - *Ajuga reptans*
2 - *Hemerocallis hybrid*
3 - *Paeonia hybrid*
4 - *Lupine hybrid*
5 - *Aegopodium podagraria*
6 - *Hosta hybrid*

D.
1 - *Festuca ovina*
2 - *Lamium maculatum*
3 - *Phlox subulata*
4 - *Sempervivum tectorum*
5 - *Digitalis purpurea*
6 - *Liatris spicata*

The best answer is B. *Ajuga Reptans* is a low growing plant with blue to purple flowers. *Phlox subulata* is also a low growing plant with white, pink, blue or lavender flowers. *Veronica spicata* is slightly taller and may have white, pink or blue flowers. *Platycodon grandiflorus* is a taller plant that may have white, pink or blue flowers and it will tolerate some shade. Hosta is well adapted to shade gardens, has interesting foliage and may have white or lavender flowers. Mertensia virginica is also well adapted to growing in the shade and it has blue flowers.

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Problem Five.

Situation:

You are doing an internship at your local County Extension office for the summer. Your main job is to look at plant samples that people bring into the office for identification and treatment recommendations of plants and their pest problems.

One day a gentleman brings in a plant for you to take a look at. It has fairly long trailing stems with triangular shaped, lobed leaves about 1" wide and 1 ½" long. It is growing in a 8" hanging basket in the client's home. The client tells you that he has had the plant for several months and that it looked fine when he bought it but lately it has not been growing as well and the leaves do not have the normal healthy shiny green appearance like it once had. In fact, some of the leaves are dry along the edges and feel a little crispy.

When asked about where the plant is growing and how he has been taking care of it he says that it is hanging on a hook in his sun room with a south exposure. The sun room can get fairly warm when the sun is shining. He waters it about once a week with about ½ cup of water.

Upon closer examination it appears that the leaves have a speckled appearance with minute tan spots. The undersides of the leaves looks kind of dirty. The leaves do not appear to be chewed in any way but do have a dry appearance.

Use the references on house plant care to help you in deciding on your diagnosis and treatment recommendations.

A. The plant is an English Ivy and is suffering from a lack of water and just needs to be watered more often and with a greater amount of water so that the excess will run out of the bottom of the pot.

B. The plant is a Heartleaf Philodendron and is suffering from an aphid infestation. Aphids feed on plants by sucking the sap out of the leaves and stems which causes the speckled appearance.

C. The plant is a Heartleaf Philodendron and it is suffering from a lack of water and needs to be watered more often and with a greater amount of water so that the excess will run out of the bottom of the pot. The plant may also be infested with scale and should be treated with a systemic insecticide.

D. The plant is an English Ivy. It is suffering from a lack of water and needs to be watered more often and with a greater amount of water so that the excess will run out of the bottom of the pot. The plant is also infested with spider mites which feed on plants by sucking the sap out of leaves, giving them a speckled appearance. It should be treated with insecticidal soap or malathion.