

Minnesota FFA Floriculture CDE Problem Solving

Bubble in the most correct answer in the Assessment and Solution section of your scantron.

Retail Pricing

Markup and Margin Table

Margin	Markup	Multiplier	Margin	Markup	Multiplier	Margin	Markup	Multiplier	Margin	Markup	Multiplier
1%	1.01%	1.010	26%	35.13%	1.351	51%	104.09%	2.041	76%	316.69%	4.167
2%	2.04%	1.020	27%	36.99%	1.370	52%	108.32%	2.083	77%	334.80%	4.348
3%	3.09%	1.031	28%	38.89%	1.389	53%	112.78%	2.128	78%	354.51%	4.545
4%	4.17%	1.042	29%	40.83%	1.408	54%	117.40%	2.174	79%	376.20%	4.762
5%	5.27%	1.053	30%	42.87%	1.429	55%	122.21%	2.222	80%	400.00%	5.000
6%	6.38%	1.064	31%	44.92%	1.449	56%	127.29%	2.273	81%	426.30%	5.263
7%	7.53%	1.075	32%	47.07%	1.471	57%	132.58%	2.326	82%	455.59%	5.556
8%	8.70%	1.087	33%	49.27%	1.493	58%	138.10%	2.381	83%	488.21%	5.882
9%	9.89%	1.099	34%	51.51%	1.515	59%	143.90%	2.439	84%	525.00%	6.250
10%	11.11%	1.111	35%	53.83%	1.538	60%	150.00%	2.500	85%	567.00%	6.667
11%	12.36%	1.124	36%	56.27%	1.563	61%	156.40%	2.564	86%	614.30%	7.143
12%	13.63%	1.136	37%	58.72%	1.587	62%	163.18%	2.632	87%	669.20%	7.692
13%	14.94%	1.149	38%	61.29%	1.613	63%	170.29%	2.703	88%	733.30%	8.333
14%	16.28%	1.163	39%	63.92%	1.639	64%	177.79%	2.778	89%	809.10%	9.091
15%	17.64%	1.176	40%	66.68%	1.667	65%	185.71%	2.857	90%	900.00%	10.000
16%	19.04%	1.190	41%	69.50%	1.695	66%	194.11%	2.941	91%	1011.10%	11.111
17%	20.49%	1.205	42%	72.41%	1.724	67%	203.01%	3.030	92%	1150.00%	12.500
18%	21.96%	1.220	43%	75.42%	1.754	68%	212.50%	3.125	93%	1328.60%	14.286
19%	23.47%	1.235	44%	78.67%	1.788	69%	222.59%	3.226	94%	1566.70%	16.667
20%	25.00%	1.250	45%	81.81%	1.818	70%	233.31%	3.333	95%	1900.00%	20.000
21%	25.75%	1.226	46%	85.19%	1.852	71%	244.81%	3.448	96%	2400.00%	25.000
22%	28.20%	1.282	47%	88.69%	1.887	72%	257.11%	3.571	97%	3233.30%	33.333
23%	29.88%	1.299	48%	92.30%	1.923	73%	270.39%	3.704	98%	4900.00%	50.000
24%	31.58%	1.316	49%	96.09%	1.961	74%	284.60%	3.846	99%	9900.00%	100.000
25%	33.33%	1.333	50%	100.00%	2.000	75%	300.00%	4.000	100%	20000.00%	200.000

- 1 Your employer has received a shipment of 24 bundles of carnations in assorted colors (25 carnations per bundle). The wholesaler billed your employer \$264 for the 24 bundles of carnations. Your employer operates on a 3 to 1 markup on all merchandise you sell in your shop. **Using the Retailer Markup and Margin Table above, your employer asks you to determine how much to charge your customers for the carnations per dozen.** Round your answer up to the next whole number

A. \$20

B. \$22

C. \$24

D. \$26

Production

2. You have decided to grow a spring crop of Marigolds this year. You planted 1/4 oz. of seed and a month after planting the seeds had an 80% yield of viable seedlings. **How many 24 count flats of Marigolds should you expect to produce?**

A. 60

B. 75

C. 90

D. 105

Seed Information for Selected Annuals (in ounces)

Alyssum	90,000
Baby's Breath	25,000
Begonia	2,000,000
Celosia	39,000
Coleus	110,000
Dusty Miller	90,000
Geranium	6,200
Impatiens	52,000
Marigolds	9,000
...

Treatment

Number of Pots that can be filled from 1 cubic foot of Artificial Potting Soil

Pot Size (Inches)	Number / cubic foot of mix
2.25	296.0
2.5	176.0
3	120.0
4	44.0
5	24.0
6	14.0
7	9.0
8	5.6
12	1.6

3. You are the production manager in a greenhouse operation. You are planning the next crop of 5,000 6 inch pots of Chrysanthemums. In your experience in the past, root rot can greatly affect your crop. You plan to try a new biological fungicide called RootShield to control the disorder before it can start. Rootshield should be mixed directly in the soil, before planting, at a rate of 1.25 lbs per cubic yard of soil mix. **How many pounds of RootShield will you need to apply to the soil needed to plant your crop?** Round up to the nearest $\frac{1}{2}$ yard
1 cubic yard = 27 cubic feet
- A. 17.5 B. 20 C. 22.5 D. 25

Media

4. Your school has recently built 5 raised beds located beside your school greenhouse. The school maintenance department will be delivering soil soon to fill up the beds. Each of the beds is 20 feet long and 4 feet wide and 8 inches tall. The price of the soil is \$45 per cubic yard. **How much will it cost to fill up the 5 raised beds?** Round up to the nearest whole cu. yd.
- A. \$300 B. \$400 C. \$450 D. \$500

Fertilizer calculation

5. A grower with a 1:150 ratio fertilizer injector and a 80 gallon stock tank desires to apply 300ppm of nitrogen to a crop of mums. The available fertilizer has a 25-15-20 analysis.

Given Formulas:

Once in 100 gallons of water = ppm desired / % N x 0.75

Pounds to Add to Stock Tank:

Ounces per 100 gallons x 2nd # of injector ratio x volume of stock tank in gallons/100 x 16

How many pounds of this fertilizer should the grower dissolve in the stock tank?

- A. 60 pounds B. 75 pounds C. 62 pounds D. 120 pounds

Safety/Reading Labels

6. You are the production supervisor for NorGlo Greenhouses and are currently growing Cyclamen for a spring crop. You discover on a mature leaf very light chlorotic stippling, as if fine sand has been sprinkled on it. Upon close examination under magnification, yellowish oval bodied organisms with 6 to 8 legs and 2 dark spots were revealed. You also noticed there were eggs present.

You would like to treat with a soluble concentrate and since you will be out of town you need the treatment to last at least 25 days. Using the cart below, which chemical should you use to treat the present problem?

A. Akari

B. Avid

C. Ovation

D. Shuttle

Product Name	Formulation ¹	Residual activity	Comments
Akari	SC	Up to 21 d	Controls all life stages including eggs; no translaminar activity so thorough coverage is essential
Avid	EC	Up to 28 d	Translaminar; controls mobile life stages, not active against eggs ^{2,3}
Floramite		Up to 28 d	Same as for Akari
Forbid	SC, F	Up to 30 d	Translaminar, controls all life stages
Hexygon	DF	Up to 45 d	Controls eggs and newly-hatched nymphs; no activity on adults; not translaminar so thorough coverage essential
Judo	SC	Up to 30 d	Same as for Forbid
Oil, Dormant		NR ⁴	Contact activity only, thorough coverage essential
Oil, summer		NR	Same as for Oil, Dormant
Ovation	SC	Up to 45 d	Same activity and mode of action as Hexygon
Pylon	EC	Up to 28 d	Same as for Avid
Sanmite		Up to 45 d	Same as for Akari
Shuttle	SC	Up to 28 d	Same as for Akari
Soaps (fatty acid salts)		NR	Contact activity only, thorough coverage essential
TetraSan	WDG	Up to 28 d	Translaminar, controls eggs and immature stages; minimal activity on adults but treated females do not produce viable eggs

1SC = soluble concentrate; EC = emulsifiable concentrate; F = flowable ; DF = dry flowable; WDG = water dispersable granule
2Translaminar refers to insecticides and miticides that can penetrate the leaf tissue and form a reservoir of active ingredient within the leaf.
3Mobile life stages include nymphs and adults, but not eggs
4NR: no residual, mites must be hit by spray

Disorders



7. Interveinal chlorosis of young leaves. In late stages, the leaf blade may lose nearly all pigment taking on a white appearance and finally turning necrotic.

The disorder described is:

A. Mildew

B. Nitrogen deficiency

C. Iron deficiency

D. Phosphorus deficiency



8. Symptoms vary greatly depending on the host and plant part affected. Generalized symptoms include a gray to brown discoloration and a fuzzy whitish gray to tan mold growing on the tissue surface.

The disorder described is:

- A. Botrytis blight**
- B. Damping off**
- C. Mildew**
- D. Phosphorus deficiency**



9. This element of floral design is shows contrast in the arrangement and would best be defined as:

- A) Harmony**
- B) Rhythm**
- C) Texture**
- D) Balance**



1

2

10. Which statement is most correct?

- A. Plant #1 is most symmetrical and is the healthiest growth.**
- B. Plant #1 has the healthiest growth but was not turned when it sat by the window..**
- C. Plant #2 is the most symmetrical and has the healthiest growth.**
- D. Plant #2 is more asymmetrical but has more desirable growth.**

Minnesota FFA Floriculture CDE Problem Solving Key

1. B
2. B
3. A
4. C
5. D
6. D
7. C
8. A
9. C
10. B