

ANSWERS TO WRITTEN CALIBRATION PROBLEMS

PROBLEM #1

1. 13.33 a/min
2. 26.67 GPM
3. 1.48 GPM/noz
4. 1419 ml

PROBLEM #2

1. 50 ft
2. 0.101 GPM/noz
3. 6 oz
4. 308 ft
5. 7.07 qts

PROBLEM #3

1. 7 gal
2. 6.6 gal
3. 2.2 gal
4. 8.8 gal
5. 500.4 gal

PROBLEM #4

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

PROBLEM #5

1. 0.20 GPM
2. 0.20 GPM
3. 127 ml
4. 40 PSI
5. 62.5

PROBLEM #6

1. 11.4 sec

PROBLEM #7

1. 60 ft
2. 0.375 oz
3. 328.53 ft
4. 6.3 MPH
5. 25 oz

PROBLEM #8

1. 0.219 GPM
2. 1300 gal
3. 15 qt Lasso
22.5 lbs. Lor
4. 32.5 gal Lasso
195 lbs. Lor
5. \$ 1440

PROBLEM #9

1. 20.6 g
2. 21.78 gpa
3. 3 gal
4. 28.67 mls
5. 2 min/44 sec

PROBLEM #10

1. increase
2. 34.6
3. 252 mls
4. 22.7

PROBLEM #11

1. 1 lb
2. 2 lbs
3. 0.5 gal
4. 0.125

PROBLEM #12

1. 3 lbs
2. 0.67 lbs
3. 0.167 lbs
4. 0.33 pts
5. 5 gal

PROBLEM #13

1. 62.5
2. 537.6 ml
3. 15 oz
4. 13.3 tanks
5. 199.5 oz

PROBLEM #14

1. 13.33 A/min
2. 0.8 hrs
3. 10 lbs
4. 6400 lbs
5. 133.3 lb/min

PROBLEM #15

1. 14.58 gal
2. 1.33 oz
3. 0.222 pts
4. 0.269 GPM
5. 19.02 \$/A

PROBLEM #16

1. 0.202 GPM
2. 2560 gal
3. 30 qts Lasso
22.5 qts Aatrex
4. 64 gal Lasso
48 gal Aatrex
5. \$1741

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PROBLEM #17

1. 0.625 oz
2. 0.125 oz
3. 0.25 oz
4. 0.39 g
5. 2607 ml
13 ml

PROBLEM #18

1. 3.6 gpm
2. 0.30 gpm
3. 40 gal
4. 5.6 lbs
5. 8003 nozzle
12 no.

PROBLEM #19

1. 50 ft. swath
264 ft. distance
2. 0.2 GPM
3. 120 fl oz
4. 6 pts
60 qts
5. 3.03 gal

PROBLEM #20

1. 4 lbs.
2. 20 lbs
3. 10 acres
4. 400 lbs.
5. 1.47 oz

PROBLEM #21

1. 80 sq. m
88 sq. m
2. 1760 ml
3. 0.88 g
4. 833 ml
5. 17.6 ml

PROBLEM #22

1. 6.12
2. 0.505
3. 5
4. 2.5
5. 20.83

PROBLEM #23

1. 20
2. 9.33
3. 23.33
4. 466.5
5. 4.29

PROBLEM #24

1. 0.009
2. 0.3
3. 1.85
4. 5.68
5. 0.337

PROBLEM #25

1. 25
2. 8.33
3. 13.33
4. 333.3
5. 1000
6. 0.14
7. 65/13.64

PROBLEM #26

1. 0.0625 oz
2. 3.2 oz
3. 387.2 ft.
4. 7.6 MPH
5. A: 250 oz
X: 80 oz

PROBLEM #27

1. 19 oz
2. 8 oz
3. 10 gal
4. 3500 gal
5. 0.126 GPM

PROBLEM #28

1. 36.4 gal
2. 76.4 lb ai
3. 20.9 gal
4. 0.269 GPM
5. 11.51 \$/A

PROBLEM #29

1. 50 ft.
2. 159 ml
3. 15 oz
4. 6.67 tanks
5. 100 oz

PROBLEM #30

- 1.
- 2.
- 3.
- 4.
- 5.

PROBLEM #31

1. 0.36 kg
2. 0.08 kg
3. 0.187 kg
4. 389 ml
5. 18.87 liters

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PROBLEM #32

1. 0.844 lbs
2. 0.063 lbs
3. 1.6 pts
4. 3.75 gals
5. 2.4 gals

PROBLEM #33

1. 77.216 sq. m.
84.9376 sq. m.
2. 1699 ml
3. 5.9 ml
4. 643 ml
5. 4 ml NIS
1689 ml carrier

PROBLEM #34

1. 5 lbs
2. 8 lbs/a
3. 8 acres
4. 160 lbs
5. 0.735 oz

PROBLEM #35

1. No, #2
2. 42.93 ml
3. 16.12 gal/ac
4. 1997.96 mls
2335.62 grams
5. 14683.8 mls

PROBLEM #36

1. A.
B.
- 2.
- 3.

PROBLEM #37

- 1.
- 2.
3. A.
B.
C.
D.
E.
F.
- 4.
- 5.

PROBLEM #38

- 1.
- 2.
- 3.

PROBLEM #39

- 1.
- 2.
- 3.

PROBLEM #40

- 1.
- 2.
- 3.
- 4.

PROBLEM #41

- 1.
- 2.
- 3.
- 4.
- 5.

PROBLEM #42

- 1.
- 2.
- 3.
- 4.
- 5.

PROBLEM #43

- 1.
- 2.
- 3.
- 4.

PROBLEM #44

- 1.
- 2.
- 3.
- 4.
- 5.

PROBLEM #45

- 1.
- 2.
- 3.
- 4.

ANSWERS TO CONTEST CALIBRATION PROBLEMS

1994 Contest Answers:

Problem#1

1. 5.95 2. 1.95 3. 47.9 4. 2.8

Problem#2

1. 240 2. 801 3. 2.50 4. 2.00 5. 41.16

Problem#3

1. 45.5 2. 0.26 3. 8003 4. 2 5. 45.5, 80.0

Problem#4

1. 0.30 2. -0.9 3. 4. 0.30

Problem#5

1. 18" 2. 54" 3. yes 4. no 5. no 6. 30%

1996 Contest Problems:

Problem #1

1. 1.8 lbs Harness
1.4 lbs Atrazine
2. -
3. 0
4. 12 hrs
5. Personal Protective Equipment
6. A. coveralls
B. waterproof shoes
C. shoes
D. socks

Problem #2

1. A: 2.6 gal
B: 24.2 lbs
2. 7.1 mph
3. 24.3 ha

Problem #4

1. 9 qts
2. 0.6 gal
3. 2.25

Problem #3

1. B. 47 mls
2. C. 825 mls
3. B. 1893 mls

1997 Contest Problems:

Problem#1.

1. a. 204.4 gal b. 595 gal
2. a. 11.1 gal b. 32.3 gal c. 602.6 gal
3. 7.0 mph

Private pesticide applicator license with certificate number

Problem#2

1. 1.8, 5.13, 14.63, 41.57, 118.54, 343.18
2. 10, 28.5, 81.3, 230.9, 658.6, 1906.6
3. 0.54 g, 3000 mls

1997 Contest Problems (cont):

Problem#3

1. Field corn, seed corn, popcorn, soybeans
2. Dimethenamid
3. 32 fluid ounces
4. 12 hours
5. 0.9375
6. 16 fluid ounces/ A
7. coveralls, gloves, shoes, socks, eyewear
8. Yes, soybean forage, hay, or straw may not be fed to livestock. Use electric fence and restrict cows to area planted to corn.

Problem#4

1. 2.8
2. 8.1
3. 3428.6
4. 34.3
5. 3390
6. A. 20.2 GPA
B. 0.0953 lbs ai/A
C. 101%, 101.7 lbs ai/A

1998 Contest Answers: NO ANSWERS

1999 Contest Answers:

Problem #1

1. 59.9
2. 3.0
3. a.) 4561.8
b.) 45.6
c.) 4553.2
4. a.) 35.9
b.) .0030 lb ai/A or 1.086 lb ai/A
c.) 143.6% GPA, 143.6% lb ai/A

Problem #2

1. 14.9
2. 1.2
3. 3.7
4. 396.7

1999 Contest Answers (cont)

Problem #3

1. flumetsulam; clopyralid
2. flumetsulam: .07 lb/A
clopyralid: .25 lb/A
3. field corn
4. .128 or .047 flumetsulam
.25 lb/A clopyralid
5. long sleeved shirt
long pants
waterproof gloves
shoes
socks
protective eyewear
6. yes; 5.4 oz/A

Problem #4

1. Dual: 3.2
Canopy: 6.4
Roundup: 3
AMS: 56
2. 7.0
3. Pre: Dual: 4.6
Canopy: 2.3
Water: 117.9
Post: Roundup: 4.4
AMS: 2.2
Water: 117.9

2000 Contest Answers:

Problem #1

1. flufenacet, isoxaflutole
2. long sleeved shirt, waterproof gloves, shoes and socks, chemical resistant apron
3. none or 0
4. none or 0
5. 39.4 lbs ai (will accept 39.3-39.5)

Problem #2

1. 10.0g rate: 3.8 37.5g rate: 14.4
22.5g rate: 8.6 50.0g rate: 19.2
2. 10.0g rate: 3.2 37.5g rate: 11.9
22.5g rate: 7.1 50.0g rate: 15.9
3. 45.9-46.1
4. 8.6
5. 185.4-185.6

Problem #3

1. 9.9
2. 13.1
3. 459.4-460.0
4. 44.9-45.1
5. 1.8

Problem #4

1. 15
2. 14.8-15.0
3. 3.7-3.8
4. 15-18
5. 14.4-14.6

2001 Contest Problems:

Multiple choice:

1. c
2. c
3. d
4. a
5. c
6. d
7. c
8. c
9. c
10. false

Problem #1

1. A. 7.5
B. 20.0
2. 16.2
3. 5.4

Problem #2

1. 6.5
2. 35
3. 26
4. 4
5. 102.5

Problem #3

1. yes
2. 16.9
3. 1210-1212 or
1553-1557

Problem #4

1. 16.7
2. 14.4
3. 3.6
4. 15-18
5. 16.2

STEPS FOR TEAM CALIBRATION

People calculating

1. Determine gpm needed and type of nozzle to use
2. Determine mL delivered in 15 sec trial run at the above gpm, also determine the $\pm 3\%$ window around desired output
3. Determine PSI needed using the selected nozzle tip
4. Do remaining calculations
5. Assist with actual calibration as needed

People calibrating

1. Organize nozzle tips and decide what nozzle size(s) can be used
-4 good tips
2. Check nozzle spacing if needed
3. Put sprayer together
4. Set pressure at theoretical setting
5. Run a 15 sec test
6. Adjust pressure as determined from above test, if needed, and retest

****Remember****

1. Screen size needed for selected tip size
2. Boom height needed when spraying with selected nozzle