

State FFA Forestry 2017 Contest Chainsaw Practicum (50 Points)

This practicum consists of 6 multiple choice and 4 true-false questions, each worth 5 points. Mark your answers on the front side of the scantron answer sheet. DO NOT mark on this exam.

Multiple choice questions

1. Which of the following best describes saw chain tensioning for a chain at operating conditions?
 - a) The chain fits snugly against the underside of the bar but can still be pulled by hand
 - b) The chain fits tightly against the underside of the bar
 - c) The chain sags and some drive links are outside of the bar groove
 - d) The chain sags but links do not come out of the bar groove on the underside of the bar

2. Without additional additives to extend its life, what is the maximum length of time you should keep fuel for your chainsaw?
 - a) A week
 - b) A month
 - c) Three months
 - d) A year

3. Which of the following is NOT recommended as proper protective apparel/attire when operating a chainsaw?
 - a) Sturdy boots with nonslip soles
 - b) Long, loose-fitting clothing
 - c) Ear plugs or ear mufflers
 - d) Gloves

4. To reduce the risk of fire and burn injuries, how far away from a refueling spot should you move before starting the chainsaw?
 - a) There is no need to move away from the refueling spot
 - b) 5 feet
 - c) 10 feet
 - d) 20 feet

5. What is bucking?
 - a) Felling a tree
 - b) Removing the limbs from a tree
 - c) When a rotating chain hits an object and the saw springs backward toward the user
 - d) Cutting the log into sections



6. In the image above, which labeled arrow is pointed toward the fuel filler cap?
- a) Arrow A
 - b) Arrow B
 - c) Arrow C
 - d) Arrow D

True-False questions

For the following true or false questions, mark A on the scantron form if the statement is true and B if the statement is false.

True False

7. A B Wind direction and speed, lean of the tree, surrounding trees and decay may affect and change the intended direction of a tree being felled.
8. A B You should engage the chain brake when starting a chain saw.
9. A B The drop start method, where the chain saw is moved in a downward motion while the starter rope is pulled, is a recommended method for starting a chain saw.
10. A B Kickback may cause the bar to move down and away from the operator in a lightning fast reaction once the moving saw chain near the upper tip of the bar nose contacts a solid object or is pinched.

State FFA Forestry 2017 Contest
Wood Identification (50 points)

Sample 1

- a. Red (Norway) pine
- b. Cherry
- c. Northern red oak
- d. Spruce

Sample 6

- a. Northern white cedar
- b. Hackberry
- c. Black walnut
- d. Tamarack (Eastern larch)

Sample 2

- a. Ash
- b. Northern red oak
- c. Ponderosa pine
- d. Butternut

Sample 7

- a. Red (Norway) pine
- b. Cherry
- c. Northern red oak
- d. Spruce

Sample 3

- a. Hickory
- b. Black walnut
- c. Cottonwood
- d. Aspen

Sample 8

- a. Douglas fir
- b. Northern red oak
- c. White pine
- d. Butternut

Sample 4

- a. Elm
- b. Cottonwood
- c. Birch
- d. Spruce

Sample 9

- a. Butternut
- b. Basswood
- c. Douglas fir
- d. Eastern red cedar

Sample 5

- a. Basswood
- b. Birch
- c. Elm
- d. White oak

Sample 10

- a. White oak
- b. Cherry
- c. Birch
- d. Cottonwood

State FFA Forestry 2017 Contest Product Scaling (50 points)

Lumber Scaling (BF = Board Feet)

1. Sample #1
 - a. 6.5 BF
 - b. 7.0 BF
 - c. 9.5 BF
 - d. 10.0 BF

2. Sample #2
 - a. 2.7 BF
 - b. 3.5 BF
 - c. 4.5 BF
 - d. 8.0 BF

3. Sample #3
 - a. 3.2 BF
 - b. 4.7 BF
 - c. 5.8 BF
 - d. 7.6 BF

4. Sample #4
 - a. 3.0 BF
 - b. 6.5 BF
 - c. 7.8 BF
 - d. 8.5 BF

Log Scaling (BF = Board Feet)

5. Sample #5
 - a. 15 BF
 - b. 30 BF
 - c. 45 BF
 - d. 60 BF

6. Sample #6
 - a. 10 BF
 - b. 20 BF
 - c. 35 BF
 - d. 40 BF

7. Sample #7
- a. 35 BF
 - b. 50 BF
 - c. 60 BF
 - d. 70 BF

Pulpwood Scaling

8. Sample #8
- a. 4.2 Cords
 - b. 5.6 Cords
 - c. 8.9 Cords
 - d. 7.5 Cords
9. Sample #9
- a. 2.4 Cords
 - b. 3.8 Cords
 - c. 7.5 Cords
 - d. 8.1 Cords

10. Knowing that the truck pictured below is hauling 100 inch wood and that the length of the front trailer is 22 feet and the length of the rear trailer is 18 feet, how much volume is the truck hauling?
- a. 8.1 Cords
 - b. 11.3 Cords
 - c. 12.7 Cords
 - d. 14.4 Cords



FORESTRY CONTEST

Contestant Name _____ Team Number _____

School _____ Code Number _____

Tally Sheet for Timber Cruising (50 points)

Record the DBH to the nearest inch, merchantable height in sawlogs, and sawlog volume in board feet for each of the marked trees.

To estimate merchantable height, use a minimum top diameter inside bark of 8 inches and a minimum log length of 8 feet (½ sawlog). If the tree includes three 8-foot half sawlogs, merchantable height would be properly recorded on the tally sheet as 1.5 sawlogs.

Tree No.	DBH	Merchantable Height (num. of 16-foot logs)	Sawlog Volume
1			
2			
3			
4			
5			
6			
7			
8			
9		X	X

Note: Final answers for DBH and merchantable height are to be entered on the scantron bubble sheet. Turn in this form so that sawlog volume can be hand-scored.

2017
State FFA Forestry Contest – Timber Cruising
ANSWER KEY

Tree No.	DBH	Merchantable Height (num. of 16-foot logs)	Sawlog Volume
1	12	2.5	85
2	12	2.5	85
3	15	2.5	157
4	20	2.5	317
5	16	2.0	159
6	16	2.0	159
7	14	1.0	69
8	14	1.0	69
9	22	X	X

Note: Please write legibly on this form as it will be hand-scored. Nothing is to be entered on the scantron bubble sheet.

2017 April FFA Forestry Contest

ANSWER KEY: Forest and Tree Disorders

- | | | |
|-----|-----|------------------------------|
| 26. | 504 | Bronze birch borer |
| 27. | 521 | Witches broom |
| 28. | 503 | Black knot of cherry |
| 29. | 505 | Deer browse damage |
| 30. | 508 | Forest tent caterpillar |
| 31. | 513 | Japanese beetle |
| 32. | 516 | Pine bark beetle |
| 33. | 502 | Bark damage from deer scrape |
| 34. | 507 | Emerald ash borer |
| 35. | 512 | Insect gall on bur oak |

2017 April FFA Forestry Invitational

ANSWER KEY: Tree ID

1. 230 Black spruce
2. 234 Eastern white pine
3. 238 Red (Norway) pine
4. 235 Jack pine
5. 229 Balsam fir
6. 240 Tamarack (eastern larch)
7. 241 White spruce
8. 233 Eastern red cedar
9. 221 Red maple
10. 203 Basswood
11. 202 Balsam poplar
12. 209 Boxelder
13. 225 Sugar maple
14. 221 Red maple
15. 201 American elm
16. 218 Northern red oak
17. 227 White oak
18. 209 Bur oak
19. 211 Cottonwood
20. 220 Quaking aspen
21. 219 Paper birch
22. 213 Hackberry
23. 212 Green ash
24. 215 Honey locust
25. 207 Black walnut

2017 April FFA Forestry Invitational

ANSWER KEY: Forestry Tools

1. 548 Skidder
2. 539 Planting hoe or bar
3. 504 Bow saw
4. 540 Pruning saw
5. 506 Cant hook
6. 555 Tree caliper
7. 557 Tree marking gun
8. 508 Chainsaw chaps
9. 528 Hip chain
10. 532 Log truck

2017
State FFA Forestry Contest – Chainsaw Practicum

ANSWER KEY

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

2017
State FFA Forestry Contest – Wood ID

ANSWER KEY

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

2017
State FFA Forestry Contest – Product Scaling

ANSWER KEY

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

FFA Forestry CDE Log Scaling Volume Table

On your data sheet, record individual tree scaling diameter (diameter inside bark) to the nearest inch and log length to the nearest even foot rounding down. Then utilizing that diameter and log length information, determine individual section board foot content from the table below.

Log Volume (Scribner Decimal C Rule)

Small-end diameter inside bark (inches)	Log Length (feet)						
	8	10	12	14	16	18	20
6	5	10	10	10	20	20	20
7	10	10	20	20	30	30	30
8	10	20	20	20	30	30	30
9	20	30	30	30	40	40	40
10	30	30	30	40	60	60	70
11	30	40	40	50	70	80	80
12	40	50	60	70	80	90	100
13	50	60	70	80	100	110	120
14	60	70	90	100	110	130	140
15	70	90	110	120	140	160	180
16	80	100	120	140	160	180	200
17	90	120	140	160	180	210	230
18	110	130	160	190	210	240	270
19	120	150	180	210	240	270	300
20	140	170	210	240	280	310	350
21	150	190	230	270	300	340	380
22	170	210	250	290	330	380	420
23	190	230	280	330	380	420	470
24	210	260	300	350	400	450	500
25	230	290	340	400	460	520	570
26	250	310	370	440	500	560	620
27	270	340	410	480	550	620	680
28	290	360	440	510	580	650	730
29	310	380	460	530	610	680	760
30	330	410	490	570	660	740	820
31	360	440	530	620	710	800	890
32	370	460	550	640	740	830	920
33	390	490	590	690	780	880	980
34	400	500	600	700	800	900	1000

FFA Forestry CDE Timber Cruising

On your score sheet, record individual tree DBH to the nearest inch and merchantable height to the nearest ½ sawlog converted to feet (e.g., 1 ½ sawlogs equals 24 feet). Then utilizing that diameter and height information, determine individual tree volume from the table below and record that information on your score sheet.

Tree Volume (Scribner Rule by Number of 16 foot logs)

Diameter breast high (inches)	Volume (board feet) when number of 16-foot logs is:					
	<i>½</i>	<i>1</i>	<i>1 ½</i>	<i>2</i>	<i>2 ½</i>	<i>3</i>
10	17	28	36	44	48	52
11	22	38	49	60	67	74
12	28	47	61	75	85	95
13	34	58	76	94	107	120
14	40	69	92	114	130	146
15	47	82	109	136	157	178
16	54	95	127	159	185	211
17	63	109	146	184	215	246
18	72	123	166	209	244	280
19	81	140	190	240	281	322
20	90	157	214	270	317	364
21	100	176	240	304	358	411
22	111	194	266	338	398	458
23	123	214	294	374	441	508
24	137	234	322	409	484	558
25	149	258	355	452	534	617
26	165	281	388	494	585	676
27	179	304	420	536	636	736
28	195	327	452	578	686	795
29	210	354	491	628	746	864
30	277	382	530	678	806	933