



State Team Name: _____

2023 Forestry CDE

2023 NATIONAL FFA TEAM ACTIVITY

Mrs. Jones has a wooded tract and is interested in selling her timber. You are a forester who represents a logging company. You are working to evaluate the stand for your company and to answer some questions that Mrs. Jones has about her woodland. You should work together to get the answers to the questions. The letters A-Q refer to stops in the forest where you will need to take measurements and make observations.

Notes:

Merchantable heights are estimated to the upper point on a tree where it becomes 10 inches in diameter, OR, where a major fork in a tree stem occurs, OR, where a limb or cluster of limbs have a combined diameter equal to $\frac{1}{2}$ of the diameter of the tree at that point. These upper limit rules are called "stoppers".

When figuring tree volumes, all trees are considered sound for the purpose of this exercise (no cull deductions). There is no pulpwood market in this area.

Measure the tree diameters in 1-inch diameter classes

Measure merchantable tree heights in 16-foot logs (to the nearest $\frac{1}{2}$ log)

Assume no declination (0°) when using compasses

Needed Equipment: Biltmore Stick, compass, calculator, and volume table

Use the tree volume table provided, **NOT** the scale on the Biltmore stick

Each question is worth 1 point unless otherwise noted.

A.

- 1) Identify this tree. (2 points) _____
- 2) What is the diameter of this tree? _____
- 3) What is the merchantable height? _____
- 4) What is the board foot volume? (2 points) _____

B.

- 5) Identify this tree. (2 points) _____
- 6) What is the diameter of this tree? _____

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C.

- 7) Identify this tree. (2 points) _____
- 8) What is the diameter of this tree? _____
- 9) What disorder does this tree possess? _____

D.

- 10) Identify this tree. (2 points) _____
- 11) What is the diameter of this tree? _____
- 12) What is the merchantable height? _____
- 13) What is the board foot volume? (2 points) _____

E.

- 14) Identify this tree. (2 points) _____
- 15) What is the diameter of this tree? _____
- 16) What is the merchantable height? _____
- 17) What is the board foot volume? (2 points) _____

F.

Refer to the line marked by the two stakes

- 18) Along what azimuth does the marked "boundary" line extend from 'F1 start' to 'F1 stop'? (2 points) _____
- 19) How many feet is this leg of the boundary from 'F1 start' to 'F1 stop'? (3 points) _____

Refer to the line marked by the two stakes

- 20) Along what azimuth does the marked "boundary" line extend from 'F1 start' to 'F1 stop'? (2 points) _____
- 21) How many feet is this leg of the boundary from 'F1 start' to 'F1 stop'? (3 points) _____

G.

- 22) Identify this tree. (2 points) _____
- 23) What is the diameter of this tree? _____
- 24) What is the merchantable height? _____
- 25) What is the board foot volume? (2 points) _____

H.

- 26) Identify this tree. (2 points) _____
- 27) What is the diameter of this tree? _____
- 28) What is the merchantable height? _____
- 29) What is the board foot volume? (2 points) _____

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I.

- 30) Identify this tool. (2 points) _____
- 31) Use the tool to take a reading at the point marked by the stake. Beware of dead trees. Do not count them. _____

J.

- 32) Identify this tree. (2 points) _____
- 33) What disorder does this tree possess? _____

K.

Refer to the line marked by the two stakes

- 34) Along what azimuth does the marked "boundary" line extend from 'K1 start' to 'K1 stop'? (2 points) _____
- 35) How many feet is this leg of the boundary from 'K1 start' to 'K1 stop'? (3 points) _____

Refer to the line marked by the two stakes

- 36) Along what azimuth does the marked "boundary" line extend from 'K2 start' to 'K2 stop'? (2 points) _____
- 37) How many feet is this leg of the boundary from 'K2 start' to 'K2 stop'? (3 points) _____

L.

- 38) Identify this tree. (2 points) _____
- 39) What is the diameter of this tree? _____
- 40) What is the merchantable height? _____
- 41) What is the board foot volume? (2 points) _____

M.

- 42) Identify this tree. (2 points) _____
- 43) What is the diameter of this tree? _____
- 44) What is the merchantable height? _____
- 45) What is the board foot volume? (2 points) _____

N.

- 46) Identify this tree. (2 points) _____
- 47) What is the diameter of this tree? _____
- 48) What is the merchantable height? _____

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O.

- 49) Identify this tree. (2 points) _____
50) What is the diameter of this tree? _____

P.

- 51) What is this tool? (2 points) _____
52) Name a use of this tool _____
53) Name a second use of this tool _____
54) How steep is it from the 'P1 start' to 'P1 stop' _____

Q.

Use the provided USGS Topography Map to answer the following questions:

- 55) What is the name of this USGS Topography Map? _____
56) What is the Scale of this USGS Topography Map? _____
57) What is the Contour Interval of this USGS Topography Map? _____
58) Which direction is Elm Spring Branch flowing in section 34, Township 25N, Range 31W? _____
59) The National Fish Hatchery is located in what quarter section of section 30, Township 25N, Range 31W? _____

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Business Problem

You have evaluated the stand of timber for your logging company. Mrs. Jones has 40 acres of timber you would like to purchase. Your task is to figure out how much you can offer Mrs. Jones for her timber while covering costs and still making a reasonable profit. Use the information below, the attached timber summary sheet, and the attached delivered timber price list.

Species	Total Volume (bd ft)	Price Delivered to Mill (\$/1,000 bd ft)
Yellow Poplar	20,000	300
White Oak	10,000	600
Red Oak	20,000	400
Misc	25,000	250
Walnut	5,000	700

You know that in this area it costs about \$200 per thousand to operate your logging crew (stump to log deck), \$100 per thousand to haul to the mill, and \$25 per acre to retire your roads, trails and landings.

You would like to make a 20% profit over your expenses.

- 60) What is your logging cost? _____
- 61) What is your hauling cost? _____
- 62) What is your site retirement cost? _____
- 63) How much is your projected profit? _____
- 64) How much do you expect to get at the mill? _____
- 65) What is your offer to Mrs. Jones? (3 points) _____