

FINAL TEST (SHORT ANSWERS)

NOTE: RECORD YOUR ANSWERS ON THE LAST PAGE

Date: _____

Name: _____

Grade: _____

Student # _____

-
1. How much would it cost to cover a floor 9m x 6m with a carpet valued at \$13.00 per square meter?
 2. The total height of a table is made up of the following dimensions: $1\frac{3}{4}"$, $1\frac{1}{8}"$, $1' 7\frac{1}{2}"$, $5/16"$. How high is the table in inches?
 3. Divide \$144.00 between two persons at a ratio of 5:7. (12 parts)
 4. What is the diameter of a pulley, which revolves at 225 RPM if it is driven by a 6" pulley running at 900 RPM?
 5. An edge sander has a driving wheel 6" dia. And an idling wheel 3" dia. The center to center distance between these wheels is 84". What length of belt is required? (round to 2 decimal places)
 6. You are to calculate the total glue requirements for a veneer run as follows:

Quantity: 47- three-ply panels

Finish size: 29" x 22"

Coverage = 20 grams/ sqft

Waste = 10%

2:1 ratio of resin & water respectively

Note: Do **not** add 1" to length/ width for rough size – no allowances required.

Math Fundamentals for Woodworking (MATH 1435)

7. Sarah and Kyle “thought once and cut twice” too many times. As a result, we need to reproduce:

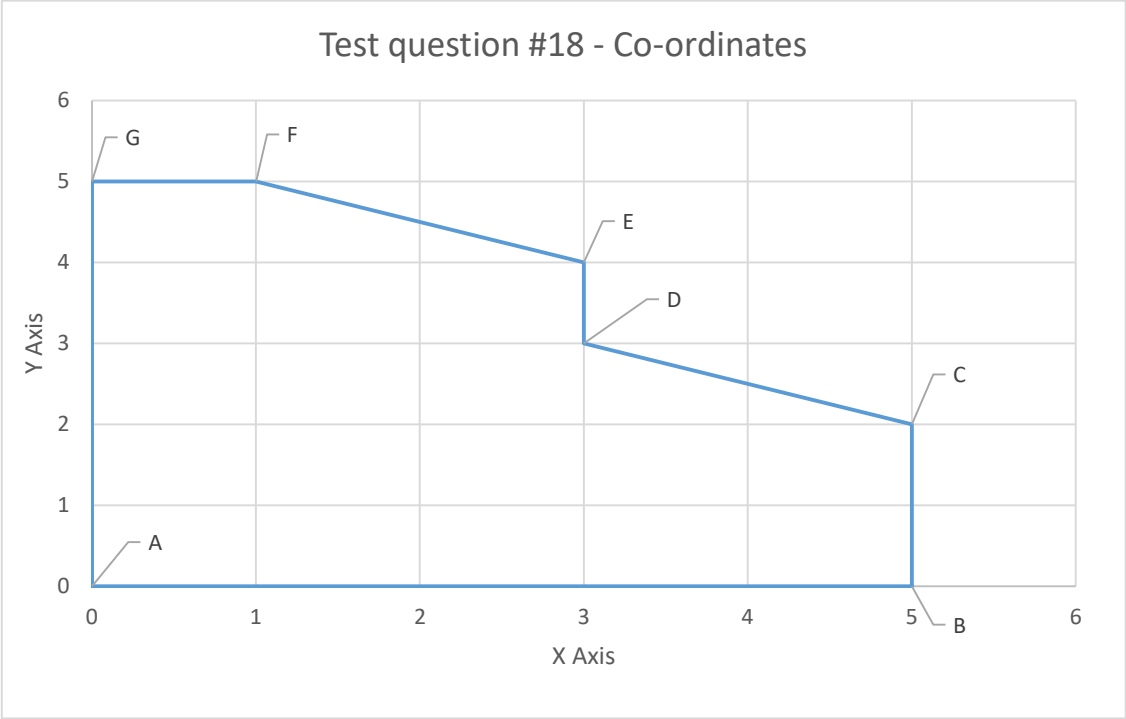
A total of **47 pieces**, 3-ply tops (consisting of):

| | | | | |
|-----|-----------------------------------|------------------|----------------|---------------|
| 1 - | Particle core ($\frac{11}{16}$) | 23" x 17" | add 20% waste | @ \$0.32/sqft |
| 1 - | Face veneer | 23" x 17" | add 100% waste | @\$0.45/sqft |
| 1 - | Back veneer | 23" x 17" | add 100% waste | @\$0.16/sqft |
| 4 - | Headers | 33" x 2 ½" x 4/4 | add 60% waste | @\$2.92/bf |

What is the cost of their mistake?

- Fill in the cost of each part for the whole job. I.e. Particle core cost x 47 pcs for the “core cost”.
- **(Note:** - Calculate the sizes as is, do not change to rough sizes.)

8. Based on the drawing shown, identify the points listed. Work counter clockwise. (1/2 mark per co-ordinate) (7 marks total)



| Absolute Coordinates | | Incremental Coordinates | |
|----------------------|--------|-------------------------|--------|
| A | X0, Y0 | A | X0, Y0 |
| B | | B | |
| C | | C | |
| D | | D | |
| E | | E | |
| F | | F | |
| G | | G | |
| A | | A | |
| | | | |

Math Fundamentals for Woodworking (MATH 1435)

Answers: (all questions worth 2 marks unless otherwise noted.)

1. _____

2. _____

3. _____

4. _____

5. _____

6. Total Square footage to cover: _____ (4 marks total)

Total Grams of Glue (with waste): _____

Resin: _____ g

Water: _____ g

7. (5 marks)

Core cost (all): _____

Total Cost (all) _____

Face veneer cost (all): _____

Back veneer cost (all): _____

Solid cost (all): _____

8. Fill in the **Absolute co-ordinates** and **Incremental co-ordinates** in their respective charts on page #3. (7 Marks)

Formulas

$$\text{Area} = \text{Length} \times \text{Width}$$

$$10 \text{ mm} = 1 \text{ cm} \quad 100 \text{ cm} = 1 \text{ m} \quad 1000 \text{ mm} = 1 \text{ m}$$

$$\text{Pulley Ratio} = \text{Drive (motor)} / \text{Driven (Arbor)}$$

$$\text{Rim Speed} = \frac{\pi \times d}{12} \times \text{rpm} \quad \pi = 3.1416$$

$$\text{Sander belt} = \left(\frac{\pi \times d (\text{wheel \#1})}{2} \right) + \left(\frac{\pi \times d (\text{wheel \#2})}{2} \right) + (2 \times \text{center to center})$$

$$\text{Board foot} = \frac{\text{Length (in inch)} \times \text{Width (in inch)} \times \text{Thickness (in inch)}}{144}$$