

Team Up Academy CNC Step-Up Test

Name: _____ Date: _____

This test measures your readiness for CNC training. Accuracy, focus, and attention to detail matter. Treat this like your first day in the shop — the machine doesn't forgive mistakes.

Section 1 — Shop Math (8 pts)

1. Convert 3.75 inches to millimeters (1 inch = 25.4 mm).
2. Round 0.3746 inches to the nearest thousandth.
3. A part is 2.500" long and must be $\pm .002$ ". What's the acceptable range?
4. Add the following: $1.125 + 0.4375 + 2.006 =$ _____
5. Subtract 1.375 from 4.000 = _____
6. What is half of 7.625 inches?
7. A print calls for a 45° chamfer. If one side is .100", what is the other leg length?
8. Simplify: $(2.5 \times 3.4) \div (1.7) =$ _____

Section 2 — Print Reading & Blueprint Concepts (6 pts)

9. What does Ø represent on a blueprint?
10. If a hole is marked $\text{Ø}.500 \pm .005$, what's the smallest acceptable size?
11. Explain what a datum is in your own words.
12. On a print, "TYP 4X" appears next to a feature. What does that mean?
13. If two holes are dimensioned center to center, what tool would you use to check that?
14. The note "BREAK ALL EDGES .010" means what should be done?

Section 3 — CNC Concept Readiness (5 pts)

15. In your own words, what does CNC stand for and what does it do?
16. What is the difference between absolute and incremental coordinates?
17. What is a tool offset used for?
18. What safety checks must be done before pressing "Cycle Start"?
19. What is a zero point, and why is it critical?

Section 4 — Mindset & Work Ethic (6 pts)

20. What does "attention to detail" mean to you in a machine shop?
21. Describe one time you made a mistake and what you learned from it.
22. Why is precision more important than speed in machining?

23. How would you handle frustration if a part keeps coming out wrong?
24. Why should a machinist care about cleanliness and organization?
25. What does this phrase mean to you: "Measure twice, cut once — and then check again."

Instructor Note (not on student copy)

- Scoring: 25 points total (8 math + 6 print + 5 CNC + 6 mindset)
- Passing: 18+ demonstrates readiness; below 18 suggests additional prep.
- Tone: Read aloud that “CNC work separates hobbyists from professionals — precision is a lifestyle.”