Guitar Fretboard Grid Paper: Scale and Fret Layout Guide

Original tasks 1, 2 / complete keys

Task 1

On a fretboard grid with columns labeled fret 0 through at least fret 17, low E at the bottom and fret numbers increasing to the right, mark the first six ascending tones of an A minor pentatonic scale starting at fret 5 on low E. Use the interval pattern 3-2-2-3-2 semitones; mark the starting A with a double circle, the other tones with filled circles, and include the octave A. List each string and fret.

Answer: A at low E fret 5; C at fret 8; D at fret 10; E at fret 12; G at fret 15; and the octave A at fret 17. All six positions are on the low E string. The intervals are 3, 2, 2, 3, and 2 semitones.

Reason: Start at A on fret 5 and add each interval in fret columns: 5+3=8, 8+2=10, 10+2=12, 12+3=15, and 15+2=17. Including the sixth tone completes the stated five-step pattern at the octave.

Check: Count the five fret gaps: 5→8 is 3, 8→10 is 2, 10→12 is 2, 12→15 is 3, and 15→17 is 2. Confirm the final A is 12 semitones above the starting A.

Task 2

A hypothetical scale length is 600 mm. On a proportional fretboard grid, the twelfth fret should be at half the scale length. Calculate the distance from the nut to fret 12 in millimeters. Then state the distance from fret 12 to the bridge. Label these as hypothetical.

Answer: Half of 600 mm is 300 mm. So the nut-to-fret-12 distance is 300 mm (hypothetical). The fret-12-to-bridge distance is also 300 mm (hypothetical). Check: 300 + 300 = 600 mm.

Reason: The twelfth fret is at half the vibrating string length. Divide the total scale length by two. The remaining distance is the same because the total is split in half.

Check: Add the two distances and confirm they equal the total scale length. Use consistent units (millimeters).

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Original tasks 3, 4 / complete keys

Task 3

On a grid with high E at the top and low E at the bottom, plot the note G at three different positions. Use the fact that open G string is G, and the interval from low E to G is three semitones. List the string and fret for each G.

Answer: G at open G string, fret 0. G at low E string, fret 3 (three semitones up from E). G at high E string, fret 3 (three semitones up from E). Check: open G is G; low E fret 3 is G because E to F is one, F to F# is two, F# to G is three; high E fret 3 is also G by the same interval.

Reason: Use the open string pitches and count semitones. The same pitch appears on different strings at different frets. Confirm string order before plotting.

Check: Verify each position by counting semitones from the open string. Check that the note name matches G and that the string label is correct.

Task 4

A grid shows fret spacing that decreases toward the body. The distance from nut to fret 1 is 36 mm (hypothetical). The distance from nut to fret 2 is 70 mm (hypothetical). Calculate the distance between fret 1 and fret 2. Then state whether the spacing is decreasing and explain why.

Answer: Distance between fret 1 and fret 2 is 70 - 36 = 34 mm (hypothetical). The spacing is decreasing because 34 mm is less than 36 mm. Check: 36 + 34 = 70 mm.

Reason: Subtract the cumulative distance to fret 1 from the cumulative distance to fret 2. Compare the result to the first fret distance. A smaller second interval indicates decreasing spacing.

Check: Add the fret 1 distance and the fret 1-to-2 distance to confirm the total to fret 2. Use consistent units and label values as hypothetical.

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Source rubric / reflection

- [ ] Grid orientation and string labels are correctly identified before plotting.
- [ ] Scale tones are marked in the correct cells with a consistent symbol convention.
- [ ] Interval pattern is applied by counting fret columns, not lines.
- [ ] Octave relationships are checked at fret 12 and across strings.
- [ ] Any numerical measurements are labeled as hypothetical and use consistent units.
- [ ] Work is checked with simple arithmetic and a ruler where applicable.

Reflection: What did you check, what did you change, and what will you try next?