# Draw a Happy Birthday Banner: Lettering and Layout Guide

Original tasks 1, 2, 3, 4 / complete keys

Task 1

A strip is 40 cm long with 2 cm margins each side. There are 8 letters, average width 3 cm, and 7 gaps of 1 cm. Does the lettering fit?

Answer: Usable length is 40 minus 4 equals 36 cm. Letter total is 8 times 3 equals 24 cm. Gap total is 7 times 1 equals 7 cm. Planned total is 31 cm, which is less than 36 cm, so it fits with 5 cm spare.

Reason: Subtract margins first, then add letter widths and gaps, and compare to usable length.

Check: Recompute 40 - 4 = 36; 8 x 3 = 24; 7 x 1 = 7; 24 + 7 = 31; 31 < 36.

Task 2

A 60 cm strip has 3 cm margins each side and 12 letters. What is the spacing interval if you divide the usable length equally among the letters?

Answer: Usable length is 60 minus 6 equals 54 cm. 54 divided by 12 equals 4.5 cm per letter position.

Reason: The interval is the usable length divided by the number of letters, used to place tick marks.

Check: Multiply 4.5 by 12 to get 54, then add 6 cm of margins to get 60 cm.

Task 3

You plan 9 letters of average width 4 cm with 8 gaps of 1.5 cm. What is the planned lettering width?

Answer: Letter total is 9 times 4 equals 36 cm. Gap total is 8 times 1.5 equals 12 cm. Planned width is 36 plus 12 equals 48 cm.

Reason: Multiply letters by average width, multiply gaps by gap width, and add the two totals.

Check: Recompute 9 x 4 = 36; 8 x 1.5 = 12; 36 + 12 = 48.

Task 4

A banner has 13 letters and 12 gaps. If each gap is 1 cm and the word space adds 4 cm, what is the total gap allowance?

Answer: The 12 gaps total 12 cm. Adding the 4 cm word space gives 16 cm total gap allowance.

Reason: Count the gaps between letters, multiply by gap width, then add the word space separately.

Check: 12 x 1 = 12; 12 + 4 = 16.

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Source rubric / reflection

- [ ] Baseline and midline are drawn and visible during lettering.
- [ ] All 13 letters are present and centered on planned ticks.
- [ ] Gaps follow the stated spacing convention consistently.
- [ ] Left and right margins are roughly equal.
- [ ] Lowercase letters stay within the x-height zone; capitals share the baseline.
- [ ] The banner is legible from about two meters away.
- [ ] Valid alternatives are accepted if the convention is stated and followed.

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