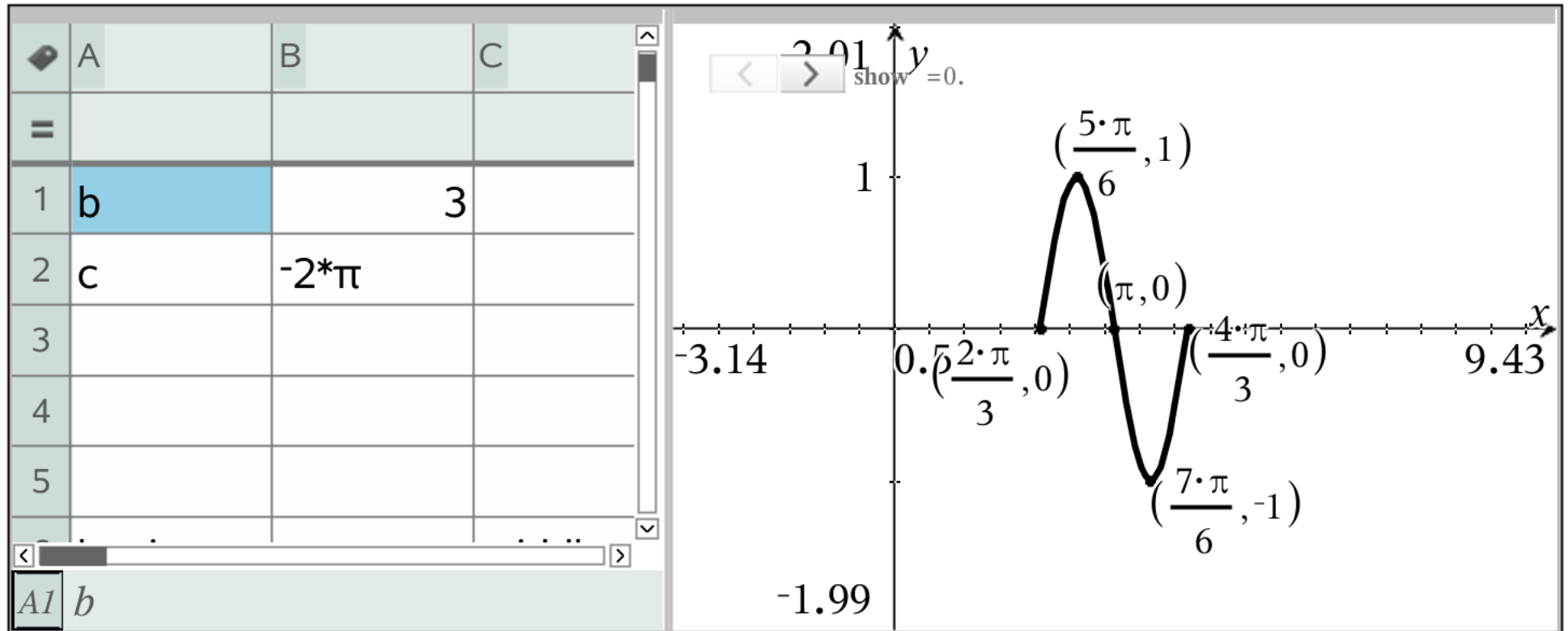


Problem 1

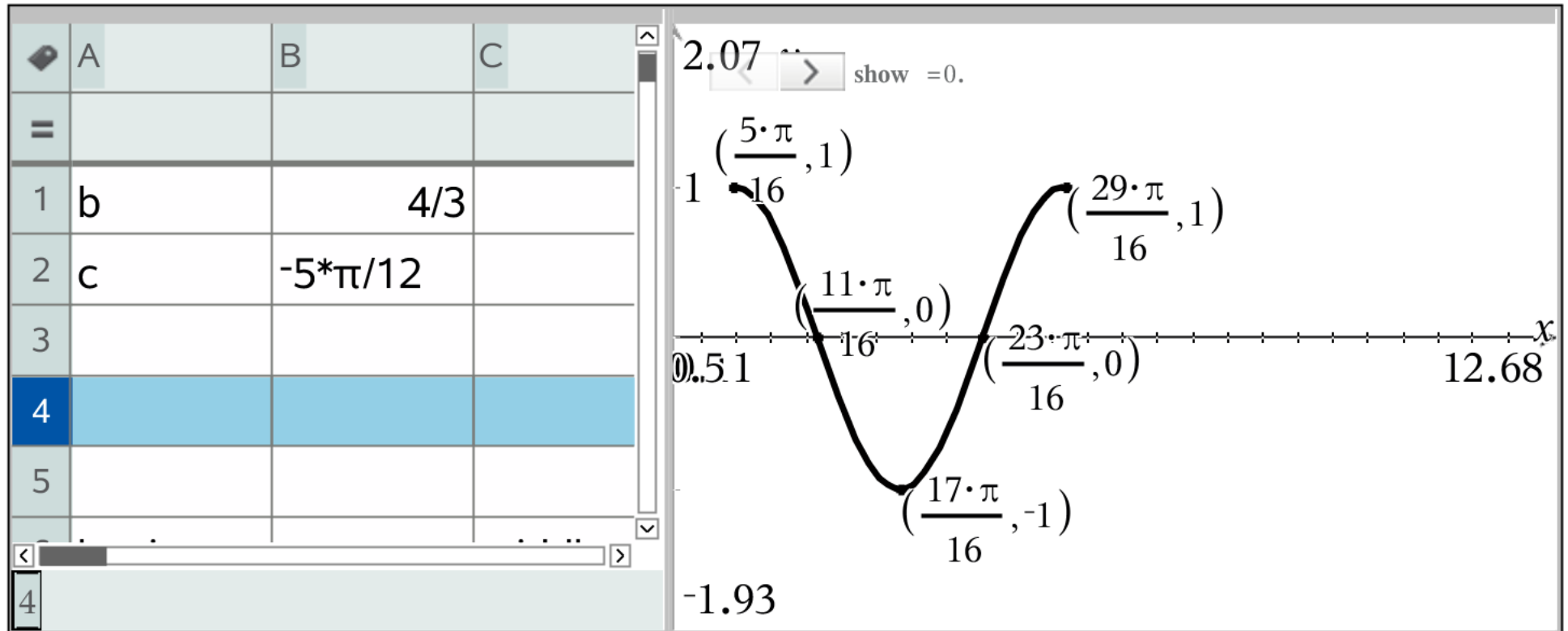


$y = \sin(3 \cdot x - 2 \cdot \pi)$ This is a **compression** PHASE SHIFT $\frac{2 \cdot \pi}{3}$ radians to **right**

Period length = $\frac{2 \cdot \pi}{3}$ One of the Periods $[\frac{2 \cdot \pi}{3}, \frac{4 \cdot \pi}{3})$

Other Periods $[\frac{-2 \cdot \pi}{3}, 0)$ $[0, \frac{2 \cdot \pi}{3})$ $[\frac{4 \cdot \pi}{3}, 2 \cdot \pi)$ $[2 \cdot \pi, \frac{8 \cdot \pi}{3})$

Problem 2

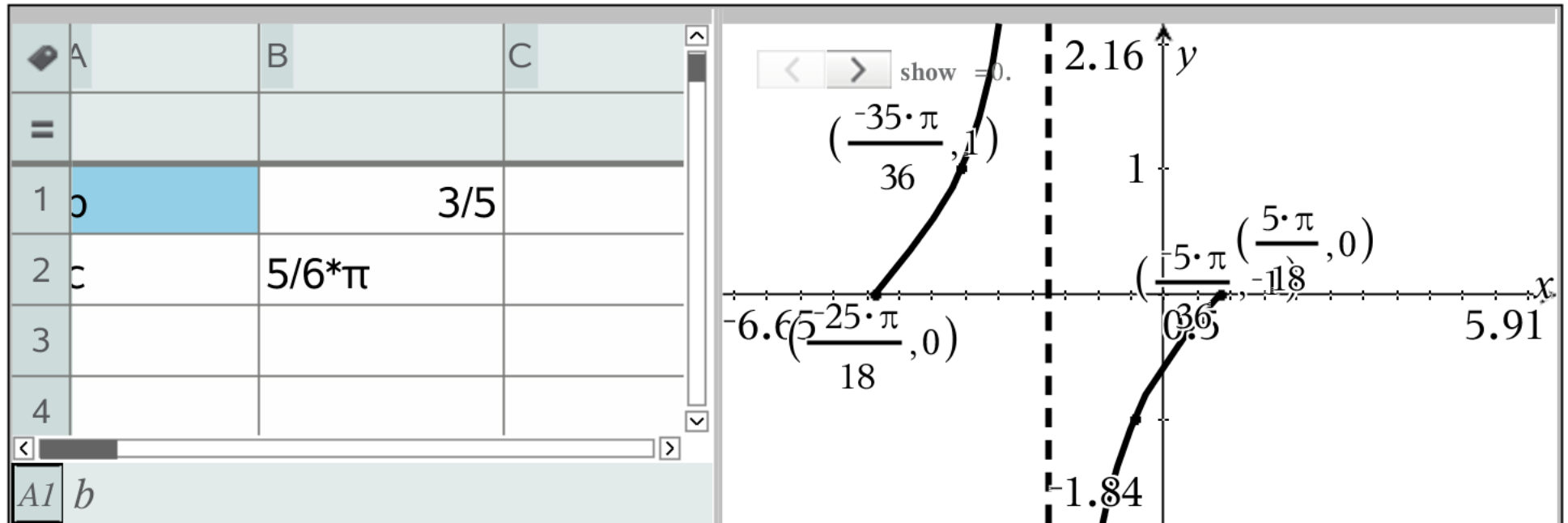


$y = \cos(\frac{4 \cdot x}{3} - \frac{5 \cdot \pi}{12})$ This is a **compression** PHASE SHIFT $\frac{5 \cdot \pi}{16}$ radians to **right**

Period length = $\frac{3 \cdot \pi}{2}$ One of the Periods $[\frac{5 \cdot \pi}{16}, \frac{29 \cdot \pi}{16})$

Other Periods $[\frac{-43 \cdot \pi}{16}, \frac{-19 \cdot \pi}{16})$ $[\frac{-19 \cdot \pi}{16}, \frac{5 \cdot \pi}{16})$ $[\frac{29 \cdot \pi}{16}, \frac{53 \cdot \pi}{16})$ $[\frac{53 \cdot \pi}{16}, \frac{77 \cdot \pi}{16})$

Problem 3



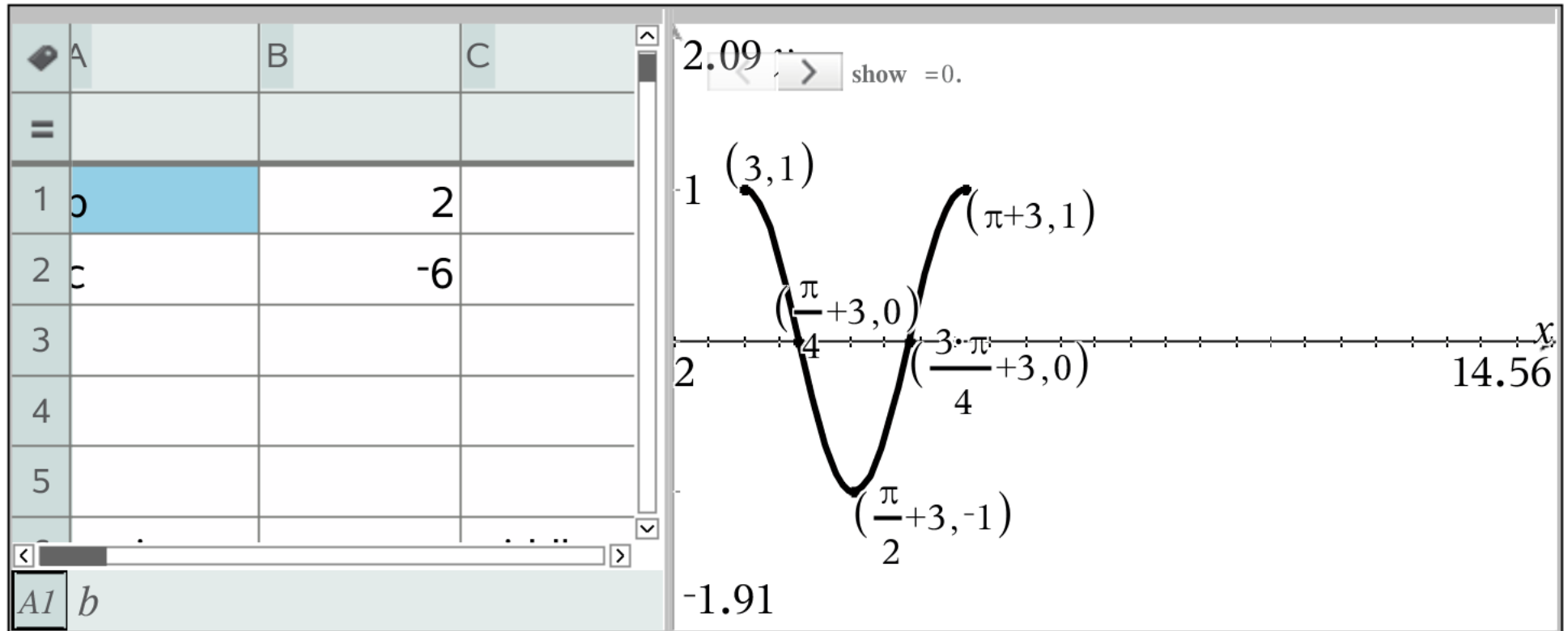
$y = \tan\left(\frac{3 \cdot x}{5} + \frac{5 \cdot \pi}{6}\right)$ This is a **stretch** PHASE SHIFT $\frac{25 \cdot \pi}{18}$ radians to **left**

Period length = $\frac{5 \cdot \pi}{3}$ One of the Periods $\left[\frac{-25 \cdot \pi}{18}, \frac{5 \cdot \pi}{18}\right)$ Related Asymptote $x = \frac{-5 \cdot \pi}{9}$

Other Periods $\left[\frac{-85 \cdot \pi}{18}, \frac{-55 \cdot \pi}{18}\right)$ $\left[\frac{-55 \cdot \pi}{18}, \frac{-25 \cdot \pi}{18}\right)$ $\left[\frac{5 \cdot \pi}{18}, \frac{35 \cdot \pi}{18}\right)$ $\left[\frac{35 \cdot \pi}{18}, \frac{65 \cdot \pi}{18}\right)$

Asymptotes $x = \frac{-35 \cdot \pi}{9}$ $x = \frac{-20 \cdot \pi}{9}$ $x = \frac{10 \cdot \pi}{9}$ $x = \frac{25 \cdot \pi}{9}$

Problem 4



$y = \cos(2 \cdot x - 6)$ This is a **compression** PHASE SHIFT 3 radians to **right**

Period length = π One of the Periods $[3, \pi + 3)$

Other Periods $[3 - 2 \cdot \pi, 3 - \pi)$ $[3 - \pi, 3)$ $[\pi + 3, 2 \cdot \pi + 3)$ $[2 \cdot \pi + 3, 3 \cdot \pi + 3)$