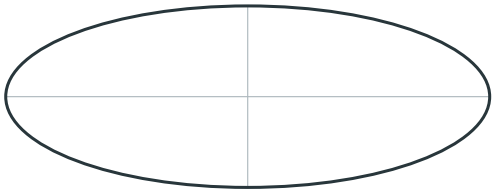
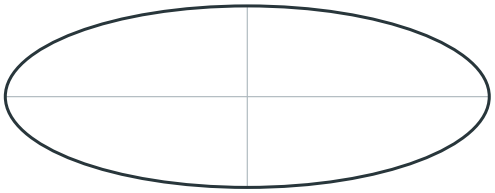
Large horizontal ellipses

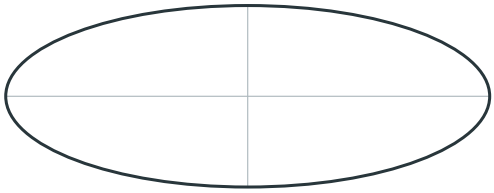
Use one calm pass. Check the major and minor axes, smooth turning and balance. Reference curves are geometric guides; hand-drawn quality is assessed with the checklist.



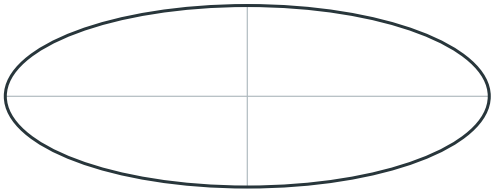
a=32, b=12 mm; rotation 0 deg



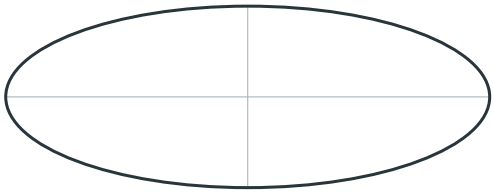
a=32, b=12 mm; rotation 0 deg



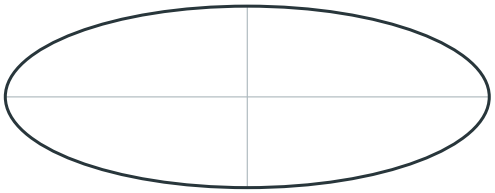
a=32, b=12 mm; rotation 0 deg



a=32, b=12 mm; rotation 0 deg



a=32, b=12 mm; rotation 0 deg



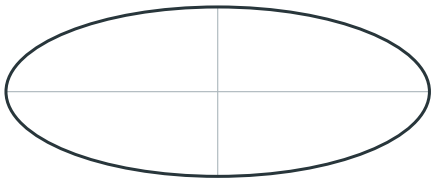
a=32, b=12 mm; rotation 0 deg

Self-check: smooth ends; centered axes; balanced halves; tangent contact with guide box when shown. A repeated line is a new attempt, not an exact numerical answer.

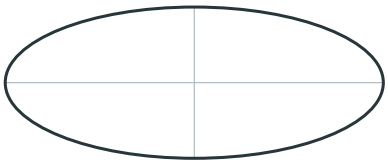
Zumola / CC BY 4.0 / Free to print, share and adapt with attribution

Smaller controlled loops

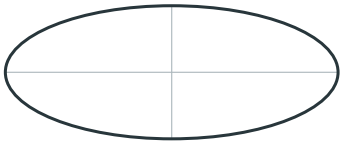
Use one calm pass. Check the major and minor axes, smooth turning and balance. Reference curves are geometric guides; hand-drawn quality is assessed with the checklist.



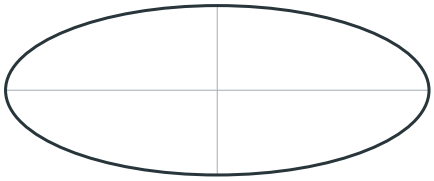
a=28, b=11.2 mm; rotation 0 deg



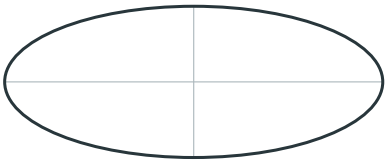
a=25, b=10 mm; rotation 0 deg



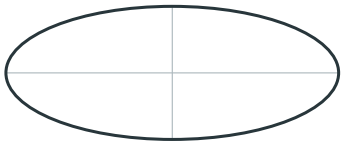
a=22, b=8.8 mm; rotation 0 deg



a=28, b=11.2 mm; rotation 0 deg



a=25, b=10 mm; rotation 0 deg



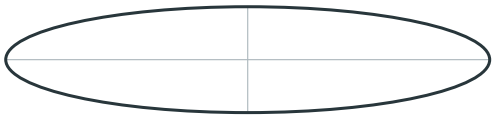
a=22, b=8.8 mm; rotation 0 deg

Self-check: smooth ends; centered axes; balanced halves; tangent contact with guide box when shown. A repeated line is a new attempt, not an exact numerical answer.

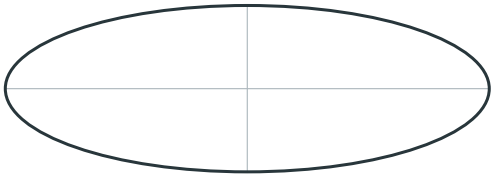
Zumola / CC BY 4.0 / Free to print, share and adapt with attribution

Compare ellipse ratios

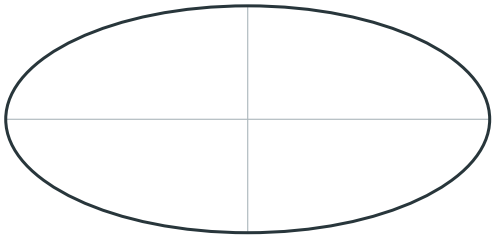
Use one calm pass. Check the major and minor axes, smooth turning and balance. Reference curves are geometric guides; hand-drawn quality is assessed with the checklist.



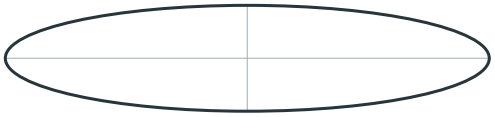
a=32, b=7 mm; rotation 0 deg



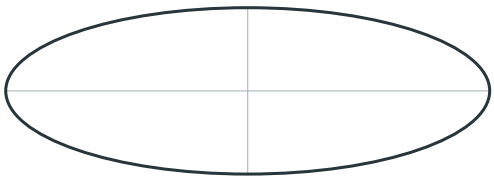
a=32, b=11 mm; rotation 0 deg



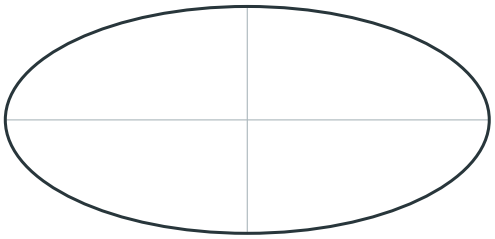
a=32, b=15 mm; rotation 0 deg



a=32, b=7 mm; rotation 0 deg



a=32, b=11 mm; rotation 0 deg



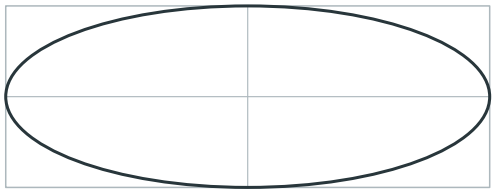
a=32, b=15 mm; rotation 0 deg

Self-check: smooth ends; centered axes; balanced halves; tangent contact with guide box when shown. A repeated line is a new attempt, not an exact numerical answer.

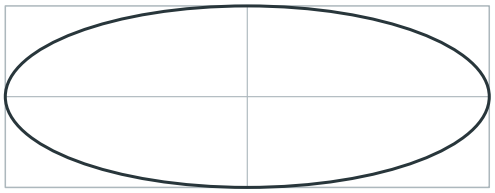
Zumola / CC BY 4.0 / Free to print, share and adapt with attribution

Fit ellipses inside boxes

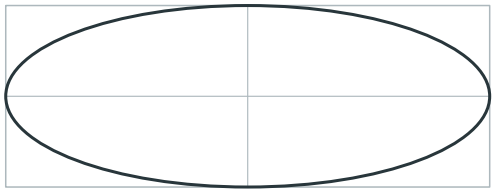
Use one calm pass. Check the major and minor axes, smooth turning and balance. Reference curves are geometric guides; hand-drawn quality is assessed with the checklist.



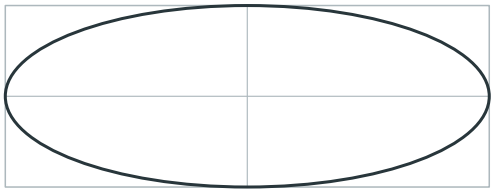
a=32, b=12 mm; rotation 0 deg



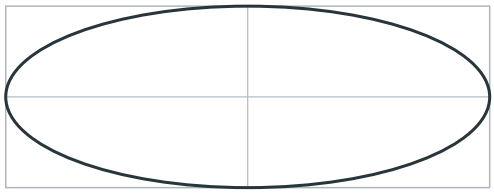
a=32, b=12 mm; rotation 0 deg



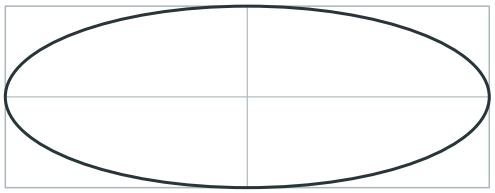
a=32, b=12 mm; rotation 0 deg



a=32, b=12 mm; rotation 0 deg



a=32, b=12 mm; rotation 0 deg



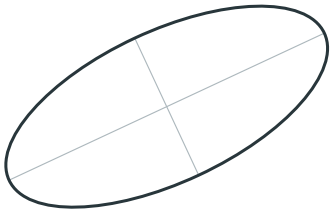
a=32, b=12 mm; rotation 0 deg

Self-check: smooth ends; centered axes; balanced halves; tangent contact with guide box when shown. A repeated line is a new attempt, not an exact numerical answer.

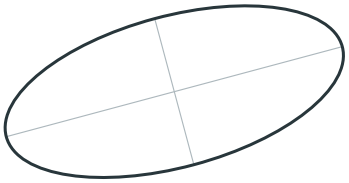
Zumola / CC BY 4.0 / Free to print, share and adapt with attribution

Rotate the ellipse axes

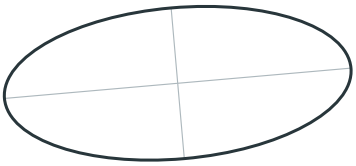
Use one calm pass. Check the major and minor axes, smooth turning and balance. Reference curves are geometric guides; hand-drawn quality is assessed with the checklist.



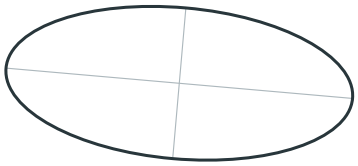
a=23, b=10 mm; rotation -25 deg



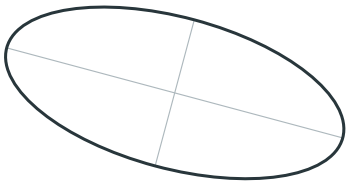
a=23, b=10 mm; rotation -15 deg



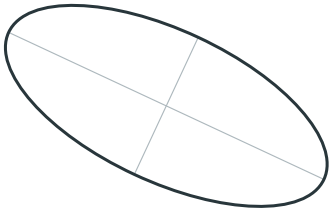
a=23, b=10 mm; rotation -5 deg



a=23, b=10 mm; rotation 5 deg



a=23, b=10 mm; rotation 15 deg



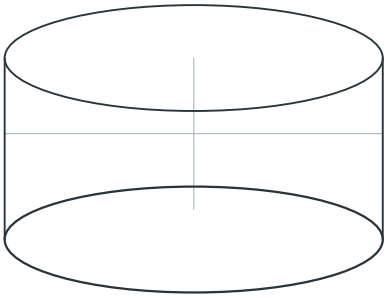
a=23, b=10 mm; rotation 25 deg

Self-check: smooth ends; centered axes; balanced halves; tangent contact with guide box when shown. A repeated line is a new attempt, not an exact numerical answer.

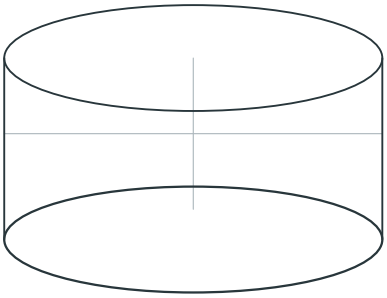
Zumola / CC BY 4.0 / Free to print, share and adapt with attribution

Build simple cylinders

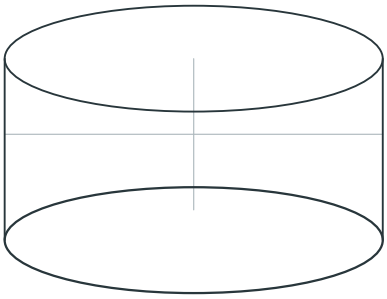
Use one calm pass. Check the major and minor axes, smooth turning and balance. Reference curves are geometric guides; hand-drawn quality is assessed with the checklist.



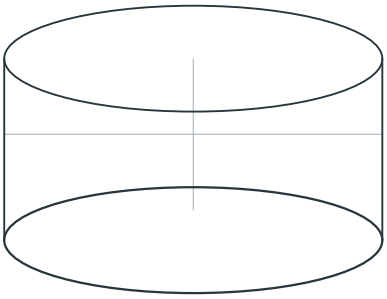
a=25, b=10 mm; rotation 0 deg



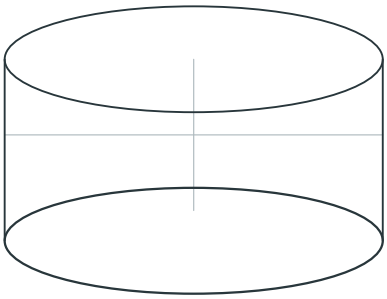
a=25, b=10 mm; rotation 0 deg



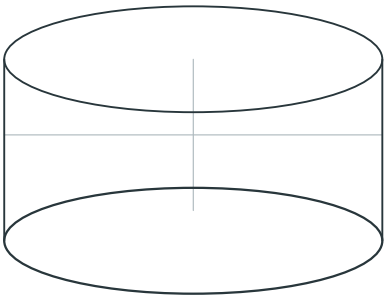
a=25, b=10 mm; rotation 0 deg



a=25, b=10 mm; rotation 0 deg



a=25, b=10 mm; rotation 0 deg



a=25, b=10 mm; rotation 0 deg

Self-check: smooth ends; centered axes; balanced halves; tangent contact with guide box when shown. A repeated line is a new attempt, not an exact numerical answer.

Zumola / CC BY 4.0 / Free to print, share and adapt with attribution