Cartoon Face Feature Placement: Eyes, Nose, Mouth

Original tasks 1 / complete keys

Task 1

A cartoon face is an oval 12 cm wide and 16 cm tall. Use the horizontal midline as the eye line. Place eye centers at the quarter marks of the width. Place the nose tip halfway between the eye line and the bottom edge. Place the mouth line halfway between the nose tip and the bottom edge. Give positions in centimeters from the left edge or top edge.

Answer: Eye line is at 8 cm from the top. Quarter marks are at 3 cm and 9 cm from the left edge, so eye centers are at 3 cm and 9 cm. Nose tip is halfway between 8 cm and 16 cm from the top, so it is at 12 cm from the top on the vertical midline (6 cm from the left edge). Mouth line is halfway between 12 cm and 16 cm from the top, so it is at 14 cm from the top on the vertical midline. Check: eye centers are 6 cm apart and each is 3 cm from the nearest side edge; nose tip is 4 cm below the eye line and 4 cm above the bottom edge; mouth line is 2 cm below the nose tip and 2 cm above the bottom edge.

Reason: The horizontal midline of a 16 cm tall oval is at 8 cm. Quarter marks of a 12 cm width are 3 cm and 9 cm. The nose tip midpoint between 8 cm and 16 cm is 12 cm. The mouth line midpoint between 12 cm and 16 cm is 14 cm. All positions are on the vertical midline except the eye centers.

Check: Measure the face width and height. Confirm the eye line is at half the height. Confirm eye centers are at one quarter and three quarters of the width. Confirm nose tip is halfway between eye line and bottom. Confirm mouth line is halfway between nose tip and bottom. Use the same unit throughout.

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Original tasks 2 / complete keys

Task 2

A cartoon face is a circle 10 cm wide and 10 cm tall. The eye line is chosen at 4 cm from the top instead of the horizontal midline. Place eye centers at the quarter marks of the width. Place the nose tip halfway between the eye line and the bottom edge. Place the mouth line halfway between the nose tip and the bottom edge. Give positions in centimeters from the left edge or top edge.

Answer: Eye line is at 4 cm from the top. Quarter marks are at 2.5 cm and 7.5 cm from the left edge, so eye centers are at 2.5 cm and 7.5 cm. Nose tip is halfway between 4 cm and 10 cm from the top, so it is at 7 cm from the top on the vertical midline (5 cm from the left edge). Mouth line is halfway between 7 cm and 10 cm from the top, so it is at 8.5 cm from the top on the vertical midline. Check: eye centers are 5 cm apart and each is 2.5 cm from the nearest side edge; nose tip is 3 cm below the eye line and 3 cm above the bottom edge; mouth line is 1.5 cm below the nose tip and 1.5 cm above the bottom edge.

Reason: The chosen eye line is 4 cm, not the horizontal midline at 5 cm. Quarter marks of a 10 cm width are 2.5 cm and 7.5 cm. The nose tip midpoint between 4 cm and 10 cm is 7 cm. The mouth line midpoint between 7 cm and 10 cm is 8.5 cm. The alternative eye line is stated and checked.

Check: Confirm the stated eye line height is used consistently. Measure eye centers from the left edge and check they are at quarter marks. Check nose tip and mouth line midpoints from the top. Verify the order: eye line, nose tip, mouth line, bottom edge.

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Original tasks 3 / complete keys

Task 3

A cartoon face is a circle 9 cm wide and 9 cm tall. Use the horizontal midline as the eye line. Place eye centers at the quarter marks. Place the nose tip at 6 cm from the top on the vertical midline. Place the mouth line at 7.5 cm from the top on the vertical midline. Check whether the nose tip and mouth line follow the halfway conventions. Give positions in centimeters from the left edge or top edge.

Answer: Eye line is at 4.5 cm from the top. Quarter marks are at 2.25 cm and 6.75 cm from the left edge, so eye centers are at 2.25 cm and 6.75 cm. The nose tip at 6 cm from the top is not halfway between 4.5 cm and 9 cm; the halfway point is 6.75 cm. The mouth line at 7.5 cm from the top is not halfway between the given nose tip at 6 cm and 9 cm; that halfway point is 7.5 cm, so the mouth line does match the halfway convention relative to the given nose tip. Check: eye centers are 4.5 cm apart and each is 2.25 cm from the nearest side edge; the nose tip is 1.5 cm below the eye line and 3 cm above the bottom edge, so it does not follow the halfway convention; the mouth line is 1.5 cm below the nose tip and 1.5 cm above the bottom edge, so it does follow the halfway convention relative to the given nose tip.

Reason: The horizontal midline of a 9 cm tall circle is at 4.5 cm. Quarter marks of a 9 cm width are 2.25 cm and 6.75 cm. The halfway point between the eye line at 4.5 cm and the bottom at 9 cm is 6.75 cm, so the given nose tip at 6 cm is not halfway. The halfway point between the given nose tip at 6 cm and the bottom at 9 cm is 7.5 cm, so the given mouth line does follow that convention.

Check: Calculate the eye line as half the height. Calculate quarter marks for eye centers. Calculate the halfway point between eye line and bottom and compare with the given nose tip. Calculate the halfway point between the given nose tip and bottom and compare with the given mouth line. Use consistent units.

Cartoon Face Feature Placement: Eyes, Nose, Mouth

Original tasks 4 / complete keys

Task 4

A cartoon face is an oval 14 cm wide and 18 cm tall. Use the horizontal midline as the eye line. Place eye centers at the quarter marks. Place the nose tip halfway between the eye line and the bottom edge. Place the mouth line halfway between the nose tip and the bottom edge. Then move the mouth line 1 cm lower and state the new position. Give positions in centimeters from the left edge or top edge.

Answer: Eye line is at 9 cm from the top. Quarter marks are at 3.5 cm and 10.5 cm from the left edge, so eye centers are at 3.5 cm and 10.5 cm. Nose tip is halfway between 9 cm and 18 cm from the top, so it is at 13.5 cm from the top on the vertical midline (7 cm from the left edge). Mouth line is halfway between 13.5 cm and 18 cm from the top, so it is at 15.75 cm from the top. Moving the mouth line 1 cm lower gives 16.75 cm from the top on the vertical midline. Check: eye centers are 7 cm apart and each is 3.5 cm from the nearest side edge; nose tip is 4.5 cm below the eye line and 4.5 cm above the bottom edge; the original mouth line is 2.25 cm below the nose tip and 2.25 cm above the bottom edge; the moved mouth line is 3.25 cm below the nose tip and 1.25 cm above the bottom edge.

Reason: The horizontal midline of an 18 cm tall oval is at 9 cm. Quarter marks of a 14 cm width are 3.5 cm and 10.5 cm. The nose tip midpoint between 9 cm and 18 cm is 13.5 cm. The mouth line midpoint between 13.5 cm and 18 cm is 15.75 cm. Adding 1 cm gives 16.75 cm. The moved mouth line is still on the vertical midline and below the nose tip.

Check: Confirm the eye line is half the height. Confirm eye centers are at quarter marks. Confirm nose tip and original mouth line midpoints. Add 1 cm to the mouth line and confirm the new value is below the nose tip and above the bottom edge. Use the same unit throughout.

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Source rubric / reflection

- [ ] Face frame includes a vertical midline and a horizontal midline, with edges marked.
- [ ] Eye centers sit on the stated eye line and are evenly spaced from the vertical midline.
- [ ] Nose tip sits on the vertical midline below the eye line at the stated height.
- [ ] Mouth line sits on the vertical midline below the nose tip at the stated height.
- [ ] Measurements use one consistent unit and are recorded so another person can check them.
- [ ] Any alternative convention is stated clearly and checked with simple arithmetic.

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