Draw a Christmas Wreath: Loops, Bow and Berry Clusters

Original tasks 1, 2 / complete keys

Task 1

A wreath ring has an outer diameter of 20 cm and an inner diameter of 12 cm. Calculate the foliage band width. Then state how many 1.5 cm berry clusters fit along the bottom quarter of the outer circle, using pi as 3.14.

Answer: Band width is 4 cm. The outer circumference is 62.8 cm; one quarter is 15.7 cm, so 10 clusters of 1.5 cm fit with 0.7 cm left over.

Reason: Band width = (20 - 12) / 2 = 4 cm. Circumference = 20 x 3.14 = 62.8 cm. Quarter = 15.7 cm. 15.7 / 1.5 = 10 full clusters with remainder 0.7 cm.

Check: Multiply 10 by 1.5 to get 15 cm, add 0.7 cm to reach 15.7 cm. Measure the band at two opposite points to confirm 4 cm.

Task 2

You are drawing a wreath with 18 outer leaves. Each leaf overlaps the previous one by one third of its length. If each leaf is 3 cm long, what is the total length of the leaf row before overlap is removed? Describe how you would check the overlap visually.

Answer: The row length before overlap is 54 cm. Visually check that each leaf covers about 1 cm of the previous leaf and that the tips follow the outer circle.

Reason: 18 leaves x 3 cm = 54 cm total leaf length. One third of 3 cm is 1 cm, so each leaf hides 1 cm of the previous leaf. The visible advance per leaf is 2 cm.

Check: Count the visible leaf tips around the ring and confirm each tip is about 2 cm from the previous tip along the circle. Measure one overlap to confirm it is about 1 cm.

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Original tasks 3, 4 / complete keys

Task 3

A bow has two loops each 2.5 cm wide and two tails each 4 cm long. The bow is centered at the top of a wreath with an outer diameter of 18 cm. What is the total width of the bow if the loops sit side by side, and how much space remains on each side of the bow along the top half of the outer circle? Use pi as 3.14.

Answer: The bow width is 5 cm. The top half of the outer circle is about 28.26 cm, so about 11.63 cm remains on each side.

Reason: Two loops of 2.5 cm side by side give 5 cm. Outer circumference = 18 x 3.14 = 56.52 cm. Half = 28.26 cm. Subtract bow width: 28.26 - 5 = 23.26 cm. Divide by 2 sides: 11.63 cm per side.

Check: Add 11.63 + 5 + 11.63 to get 28.26 cm. Confirm the bow width by measuring the two loops together.

Task 4

You plan three berry clusters of three berries each. Each berry is 0.8 cm in diameter and berries in a cluster touch. What is the total width of one cluster if the three berries sit in a row? If the clusters are spaced evenly along the bottom quarter of a 24 cm outer-diameter wreath, what is the gap between clusters? Use pi as 3.14.

Answer: One cluster is 2.4 cm wide. The bottom quarter is about 18.84 cm; three clusters take 7.2 cm, leaving 11.64 cm for two gaps, so each gap is 5.82 cm.

Reason: Three berries of 0.8 cm in a row give 2.4 cm. Circumference = 24 x 3.14 = 75.36 cm. Quarter = 18.84 cm. Three clusters = 3 x 2.4 = 7.2 cm. Remaining = 18.84 - 7.2 = 11.64 cm. Two gaps = 11.64 / 2 = 5.82 cm.

Check: Add 2.4 + 5.82 + 2.4 + 5.82 + 2.4 to get 18.84 cm. Measure one cluster to confirm 2.4 cm and check that berries touch.

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Source rubric / reflection

- [ ] The wreath is circular with a visible inner opening and an even foliage band.
- [ ] Foliage loops overlap in one consistent direction and include a shorter inner row.
- [ ] The bow is at the top center and overlaps the leaves.
- [ ] Berry clusters appear in groups of three at the bottom and side midpoints.
- [ ] Construction lines are faint or erased, and the drawing is balanced.
- [ ] Handwriting or labels, if present, use a consistent x-height from baseline to midline; letter styles may vary.

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