Copernicus Drawing: Figure and Heliocentric Diagram

Original task 1 / complete key

Task 1

A student draws a Sun at the center and four orbits with radii 12 mm, 24 mm, 36 mm, and 48 mm. They place dots at 12 mm, 30 mm, 36 mm, and 48 mm from the center. Which dot is off its orbit, and what is the fix?

Answer: The dot at 30 mm is off its orbit. It should be moved to 24 mm to sit on the second orbit.

Reason: The orbit radii are multiples of 12 mm. A dot at 30 mm does not match any orbit radius, so it lies between orbits.

Check: Measure each dot's distance from the center with a ruler and compare it to the orbit radii.

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Original task 2 / complete key

Task 2

Using an 8 mm x-height, how tall is an eight-unit figure in millimeters? If the head occupies the top unit, what is the head zone height?

Answer: The figure is 64 mm tall. The head zone is 8 mm high.

Reason: Eight units times 8 mm equals 64 mm. The top unit is one x-height, so the head zone is 8 mm.

Check: Multiply the unit count by the x-height and measure the drawn figure from baseline to top of head.

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Original task 3 / complete key

Task 3

A diagram has orbits at 10 mm, 20 mm, and 30 mm. The label box reads 1, 3, 2 from inner to outer. What is wrong, and how should the label read?

Answer: The label order does not match the orbit order. It should read 1, 2, 3 from inner to outer.

Reason: The innermost orbit is first, then the next outward, then the outermost. The numbers must follow that sequence.

Check: Compare the label sequence to the measured orbit radii from smallest to largest.

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Original task 4 / complete key

Task 4

A figure is drawn with the head in the top unit but the feet 5 mm above the baseline. The x-height is 9 mm and the figure uses eight units. What is the total height from baseline to top of head if the feet are corrected to the baseline?

Answer: The corrected height is 72 mm.

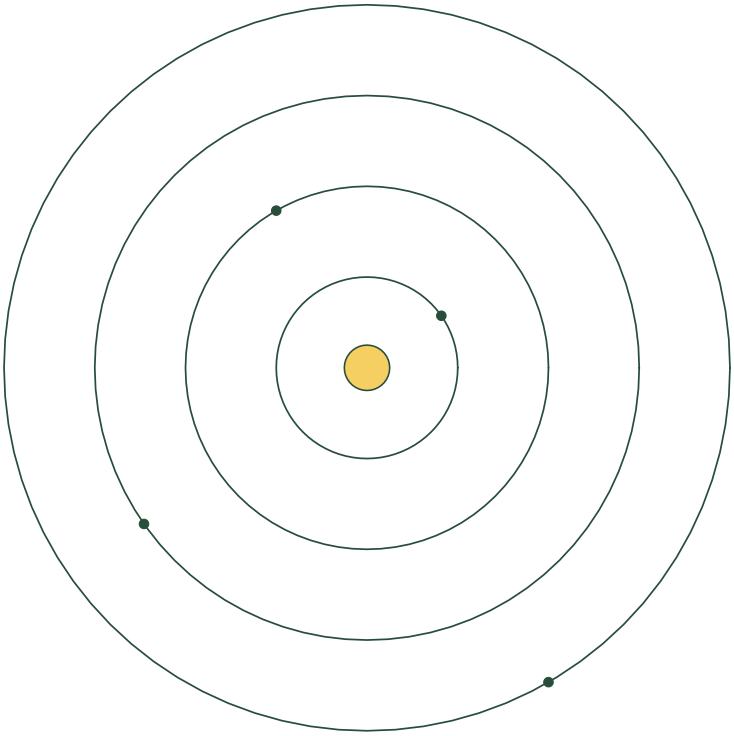
Reason: Eight units times 9 mm equals 72 mm. Moving the feet to the baseline restores the full eight-unit height.

Check: Measure from the baseline to the top of the head after correcting the feet, and compare to 8 times 9 mm.

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Task 1 / answers

Companion standing figure + Sun-centred orbit-order diagram / hypothetical mm / not a portrait



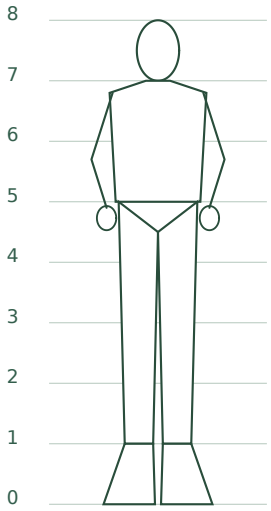
INNER -> OUTER: 1 / 2 / 3 / 4

GIVEN dot distances: 12, 30, 36, 48 mm. Only 30 mm misses its intended second orbit at 24 mm. Move it inward by 6 mm. The key shows the corrected positions; the student diagram retains the original 30 mm error.

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Task 2 / answers

Companion standing figure + Sun-centred orbit-order diagram / hypothetical mm / not a portrait

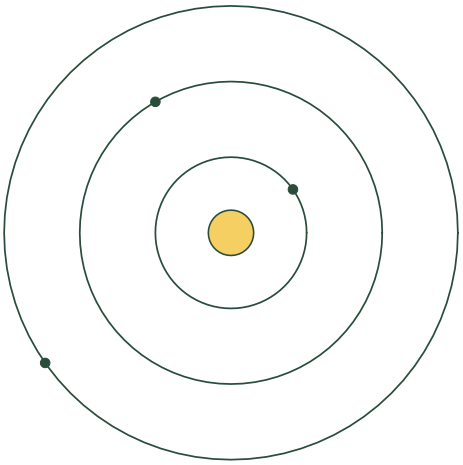


Eight 8 mm units give 64 mm from baseline to head top. The head zone is the top 8 mm, with a 16 mm torso, 32 mm legs and 8 mm feet. These are the source-selected construction zones.

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Task 3 / answers

Companion standing figure + Sun-centred orbit-order diagram / hypothetical mm / not a portrait



INNER -> OUTER: 1 / 2 / 3

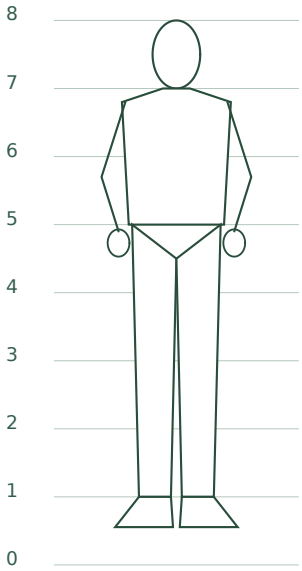
The original label 1 / 3 / 2 is wrong for inner-to-outer order. Increasing radii 10 < 20 < 30 mm correspond to 1 / 2 / 3. The student page deliberately retains the wrong label as the given.

Copernicus Drawing: Figure and Heliocentric Diagram

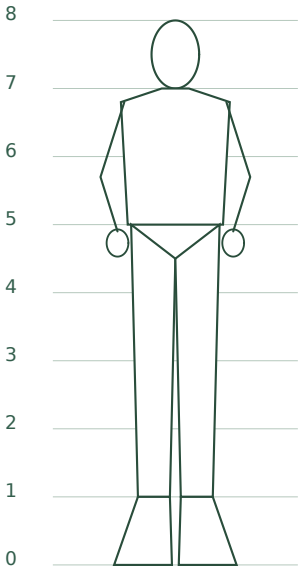
Task 4 / answers

Companion standing figure + Sun-centred orbit-order diagram / hypothetical mm / not a portrait

GIVEN / feet 5 mm above baseline



CORRECTION / feet on baseline



Keep the head top at the eighth 9 mm mark: 72 mm. The given foot contact is 5 mm above baseline. Extend or reposition the feet to baseline while retaining the marked top and head zone. Corrected total from baseline to top is 8 x 9 = 72 mm, not 77 mm.

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Source rubric / reflection

- [ ] Figure stands on the baseline and fits the marked body units.
- [ ] Sun is centered and orbits are concentric circles.
- [ ] Each planet dot touches its orbit line.
- [ ] Label box order matches the dot order from the Sun outward.
- [ ] Units are consistent and measurements are checkable.
- [ ] Valid alternatives are accepted: figure may face forward or sideways, and orbit count may vary if labeled clearly.

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