Civil War Cannon Scale Drawing: Barrel, Carriage, and Wheel Proportions

Original tasks 1, 2 / independent work

Task 1

A cannon reference gives barrel length 240 cm, carriage length 150 cm, carriage height 75 cm, and wheel diameter 120 cm. Use scale 1:20. Calculate all drawing sizes and state the wheel radius.

Task 2

A drawing uses scale 1:15. The drawn barrel is 14 cm and the drawn wheel diameter is 8 cm. What are the real barrel length and real wheel diameter?

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Original tasks 3, 4 / independent work

Task 3

A cannon has a wheel diameter of 100 cm and a carriage height of 70 cm. At scale 1:10, what is the wheel radius in the drawing, and how high above the baseline is the wheel centre?

Task 4

A student draws a barrel 20 cm long, a carriage 10 cm long, and a wheel 8 cm in diameter at scale 1:10. The real barrel is 200 cm and the real carriage is 100 cm. The real wheel is 90 cm. Which drawing size is incorrect, and what should it be?