

Solutions

2.1 Real length $L = kl = 25000(6.4 \text{ cm}) = 160000 \text{ cm} = 1.6 \text{ km}$. Time $t = 8/60 \text{ h} = 2/15 \text{ h}$. Average speed $v = L/t = (1.6 \text{ km})/(2/15 \text{ h}) = 12 \text{ km/h}$. The map ratio compares like units before conversion. The average does not assert constant instantaneous speed.

3.1 Interest then deposit gives $B_{n+1} = 1.05B_n + 100$, with $B_0 = 1000$. Thus $B_1 = 1150$ and $B_2 = 1307.50 \text{ CNY}$. Deposit first gives $C_{n+1} = 1.05(C_n + 100)$, so $C_1 = 1155$ and $C_2 = 1317.75 \text{ CNY}$. The difference is 10.25 CNY: the first early deposit earns five CNY an extra year and that advantage earns 5% in year two, while the second early deposit adds another five CNY. Operation order is part of the model.

Local guidance: select and explain the relationship; calculate every requested result; check units, scope, conditions and completeness. These are authored classroom criteria.