

Proportional Relationships Independent Check

1 Test a fictional claim

Work independently after teaching. These are constructed models and a fictional response. Show the reasoning you can explain yourself.

For 0 to 6 minutes, a tank starts with 6 liters and gains 4 liters each minute. Time is the input; total water is the output.

Time (minutes)	Total water (liters)
0	6
2	14
4	22
6	30

A fictional learner says, “Total water increases by 8 liters every 2 minutes, so total water is proportional to time with $k = 4$.” Evaluate the claim using two positive-time quotients and the zero-input pair. Write a rule for total water and explain the difference between the rate of increase and a constant of proportionality for this output.

Ratios, point, rule and conclusion

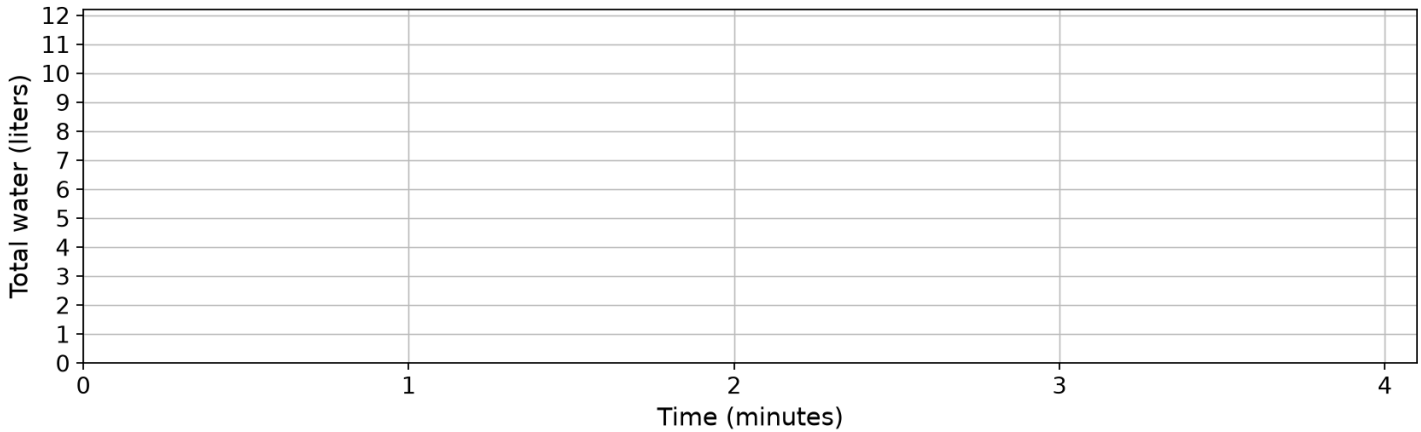
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2 Represent and qualify a model

For 0 to 4 minutes, a different tank begins empty and gains 1.75 liters each minute. Let x be minutes and y be total liters.

x (minutes)	y (liters)
0	
1	
2	
4	

Complete the table, state k with units and write a rule. Plot or describe the four labeled points on the grid. Explain the zero-input point and the one-minute point.



3 A record without a supplied rule

Another exact record shows only (1 minute, 3 liters), (3 minutes, 9 liters), (5 minutes, 15 liters). Does it establish exactly 21 liters at 7 minutes? State what the displayed quotients show and the condition needed for that prediction.

Representation and prediction explanation
