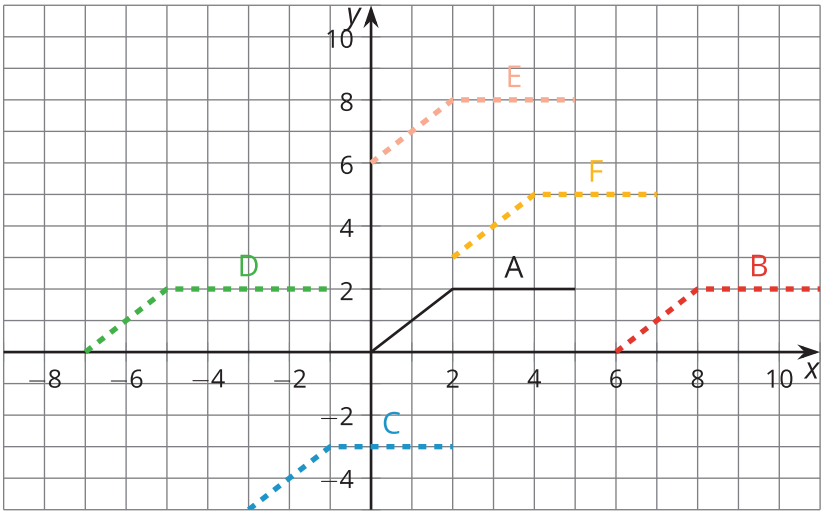
Unit 5 Lesson 3: More Movement

1 Moving a Graph (Warm up)

Student Task Statement

How can we translate the graph of A to match one of the other graphs?



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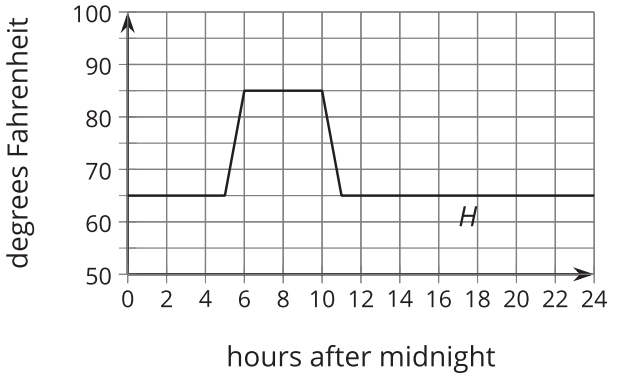
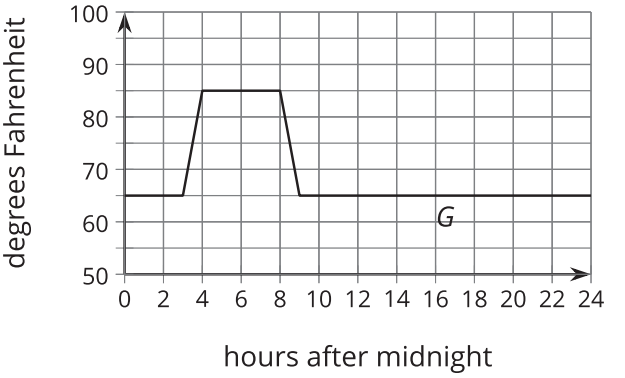
2 New Hours for the Kitchen

Student Task Statement

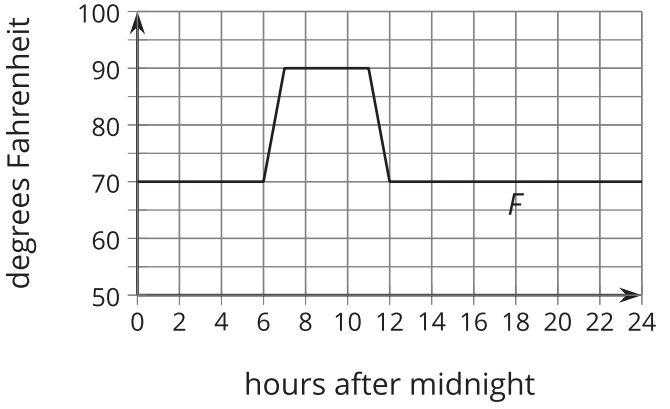
Remember the bakery with the thermostat set to 65°F? At 5:00 a.m., the temperature in the kitchen rises to 85°F due to the ovens and other kitchen equipment being used until they are turned off at 10:00 a.m. When the owner decided to open 2 hours earlier, the baking schedule changed to match.





1. Andre thinks, "When the bakery starts baking 2 hours earlier, that means I need to subtract 2 from x and that $G(x) = H(x-2)$." How could you help Andre understand the error in his thinking?

2. The graph of F shows the temperatures after a change to the thermostat settings. What did the owner do?



3. Write an expression for F in terms of the original baking schedule, H.

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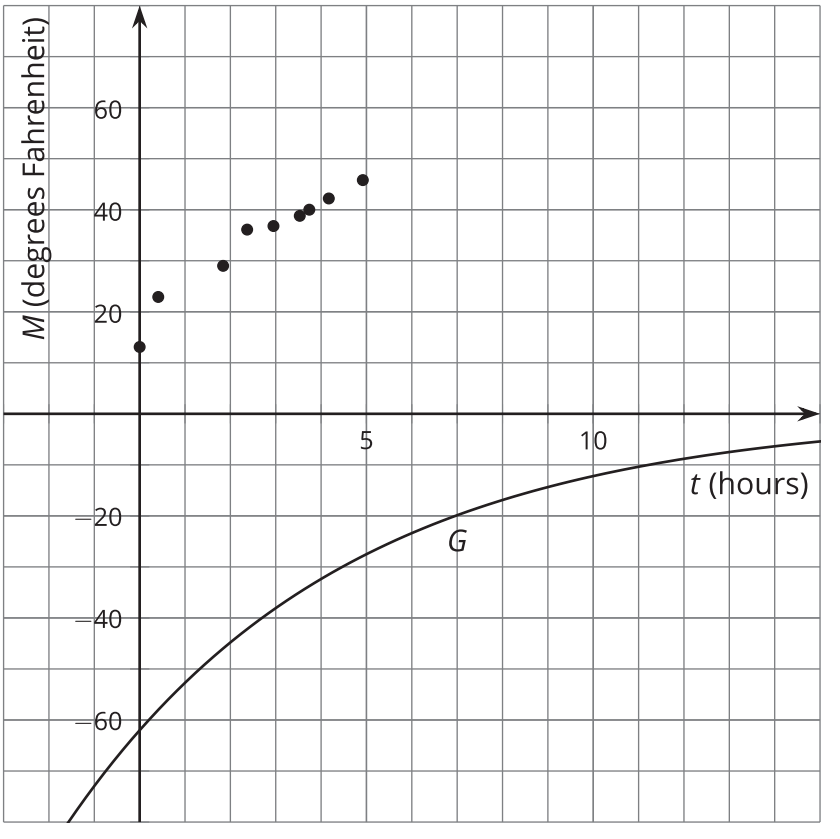
3 Thawing Meat

Student Task Statement

A piece of meat is taken out of the freezer to thaw. The data points show its temperature M, in degrees Fahrenheit, t hours after it was taken out. The graph $M = G(t)$, where $G(t) = -62(0.85)^t$, models the shape of the data but is in the wrong position.

t	M
0	13.1
0.41	22.9
1.84	29
2.37	36.1
2.95	36.8
3.53	38.8
3.74	40
4.17	42.2
4.92	45.8



Jada thinks changing the equation to $J(t) = -62(0.85)^t + 75.1$ makes a good model for the data. Noah thinks $N(t) = -62(0.85)^{(t+1)} + 68$ is better.

1. Without graphing, describe how Jada and Noah each transformed the graph of G to make their new functions to fit the data.

2. Use technology to graph the data, J and N, on the same axes.

3. Whose function do you think best fits the data? Be prepared to explain your reasoning.

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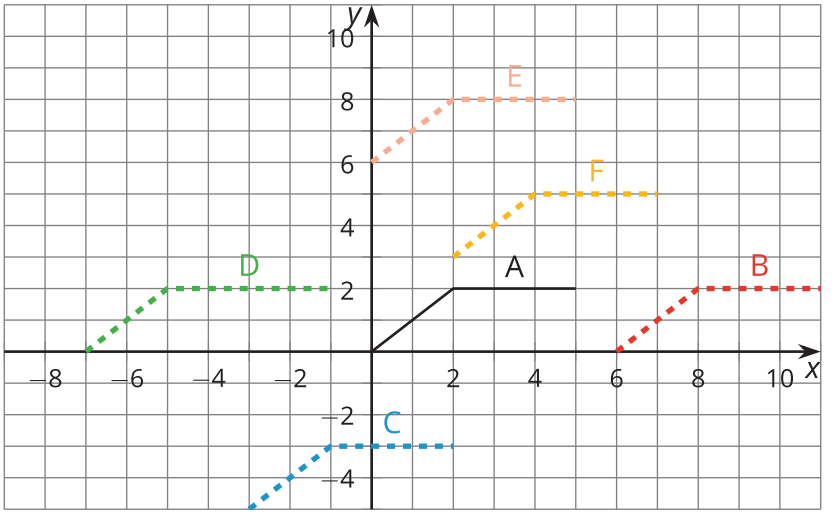
Images for Activity Synthesis



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