

PERFORMANCE TASK 

DASH FOR DOGS:

Functions Performance Task



Anna is organizing the Dash for Dogs, an annual 5K race that benefits a local animal rescue. Answer the questions below to help her plan.



1. Anna is looking at some data from previous years of the race. Determine whether the relationship shown in each table represents a function. Circle your answer.

Number of Runners	Award Medals Given Out
140	12
216	12
190	12
237	12

Does this relationship represent a function?

YES NO

Bananas Purchased	Bananas Given Out
200	189
225	220
225	204
250	244

Does this relationship represent a function?

YES NO

Number of Donors	Total Amount of Donations
297	\$2,897
401	\$4,024
352	\$3,618
478	\$4,955

Does this relationship represent a function?

YES NO

2. Anna is deciding whether to buy bottled water or jugs of water with cups. The total cost, c , of bottled water is represented by the equation $c = 1.05r$, where r is the number of runners. The total cost of jugs of water with cups is represented by the equation $c = 0.2r + 220$.

a. How much does each option cost if there are 225 runners?

Bottled water: _____ Jugs of water with cups: _____

b. How much does each option cost if there are 275 runners?

Bottled water: _____ Jugs of water with cups: _____

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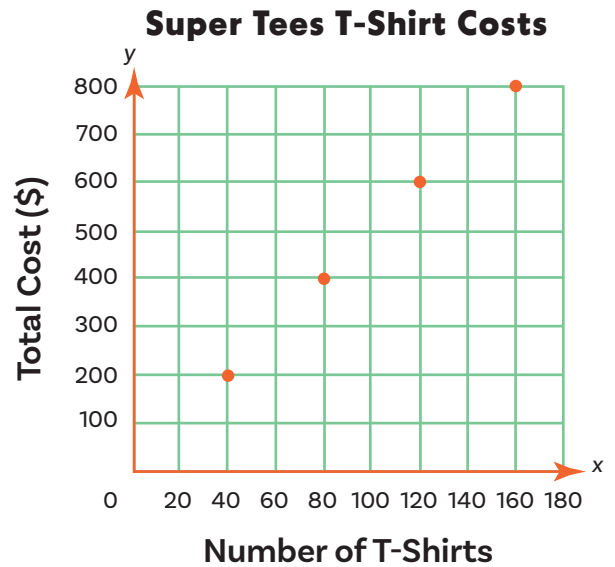
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Keep going! Answer the questions below to help Anna plan for the race.

3. Every runner gets a T-shirt for participating in the race. Anna wants to compare prices of T-shirts from two different stores, Super Tees and Print-and-Save.

a. Super Tees is a local store that charges the same amount for each T-shirt. The graph shows the cost of printing certain numbers of T-shirts.



- What is the cost per T-shirt?

- Write an equation to represent the total cost, y , of ordering x T-shirts.

b. Print-and-Save is an online store that charges the same amount for each T-shirt and a flat rate for shipping. If Anna orders 200 T-shirts, the total cost will be \$988. If she orders 250 T-shirts, the total cost will be \$1,228.

- What is the cost per T-shirt?

- What is the flat rate for shipping?

- Write an equation to represent the total cost, y , of ordering x T-shirts.

c. Anna decides to order 275 T-shirts. How much would each store charge for 275 T-shirts? If Anna wants to order from the store that charges less, which store should she pick?

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It's race day! Answer the questions below about a few runner's races.

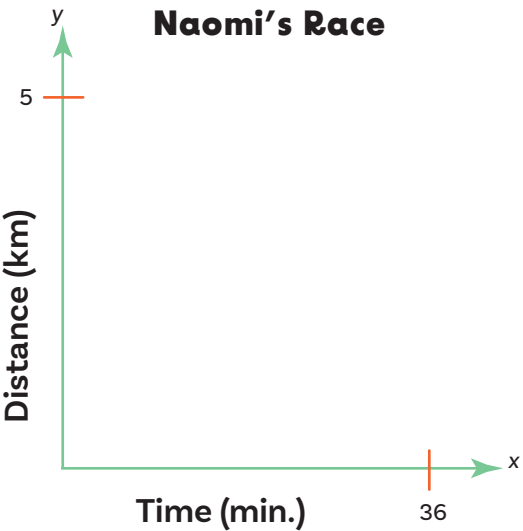
4. Elijah finished the 5-kilometer race in 40 minutes, as shown on the graph below. The graph splits his race into 4 intervals based on his different speeds over the course of the race.



- a. During which interval was Elijah's speed fastest?
- b. Elijah stopped once during the race for a water break. During which interval was that?
- c. Elijah walked for part of the race. During which interval was that?

5. Naomi and Marco both completed the race in 36 minutes.

a. Naomi ran at a constant speed for most of the race, stopped for a quick rest, and then ran at a slower constant speed to finish the race. Sketch a graph that could represent Naomi's race.



b. Marco ran at a constant speed for almost half of the race. He then slowed down to a slower constant speed before speeding up to his fastest constant speed to finish the race. Sketch a graph that could represent Marco's race.

