



Smarter Balanced Assessment Consortium: Practice Test Scoring Guide Grade 11 Braille Performance Task

Published August 15, 2013

Prepared by the American Institutes for Research®



© Smarter Balanced Assessment Consortium, 2013
Descriptions of the operation of the Test Delivery System, Test Information Distribution Engine, and related systems are property of the American Institutes for Research® (AIR) and are used with permission of AIR.



SPEEDING TICKETS

New York state wants to change its system for assigning speeding fines to drivers. The current system allows a judge to assign a fine that is within the ranges shown in Table 1.

Table 1. New York Speeding Fines

| Miles per Hour over Speed Limit | Minimum Fine | Maximum Fine |
|--|---------------------|---------------------|
| 1 – 10 | \$45 | \$150 |
| 11 – 30 | \$90 | \$300 |
| 31 or more | \$180 | \$600 |

Some people have complained that the New York speeding fine system is not fair. The New Drivers Association (NDA) is recommending a new speeding fine system. The NDA is studying the Massachusetts system because of claims that it is fairer than the New York system.

Table 2. Massachusetts Speeding Fines

| Miles per Hour over Speed Limit | Fine |
|--|--|
| 1 – 10 | \$100 flat charge |
| 11 or more | \$100 flat charge plus \$10 for each additional mph above the first 10 mph |

In this task, you will:

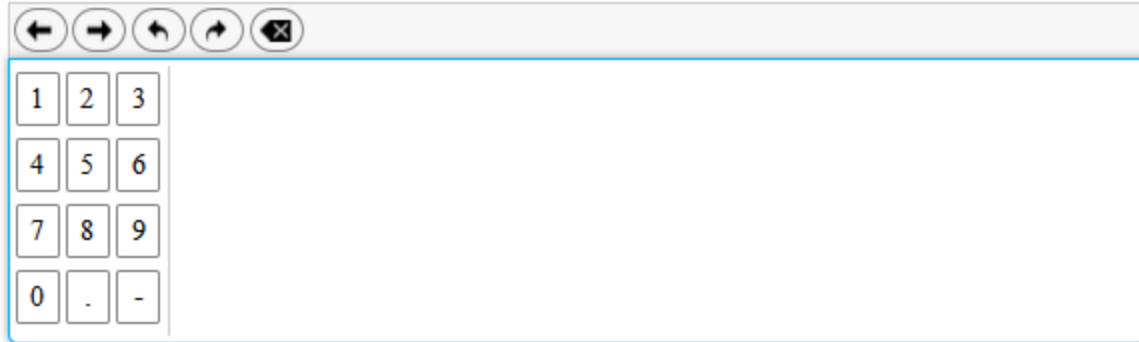
- analyze the speeding fine systems for both New York and Massachusetts.
- use data to propose a fairer speeding fine system for New York state.

1.

Part A

Use the information in Table 2 to find data for Massachusetts speeding fines.

What is the fine, in dollars, for driving 11 mph over the speed limit?

A digital calculator interface. At the top is a large empty rectangular box for the display. Below it is a row of five circular navigation buttons: left arrow, right arrow, undo (curved left arrow), redo (curved right arrow), and a square with an 'X' (clear). Below the navigation buttons is a numeric keypad with four rows of three buttons each. The first row contains '1', '2', '3'. The second row contains '4', '5', '6'. The third row contains '7', '8', '9'. The fourth row contains '0', '.', and '-'. The keypad is highlighted with a blue border.

For this item, a full-credit response (1 point) includes

- 110.

For this item, a no-credit response (0 points) includes none of the features of a full-credit response.

2.

Part B

Create an equation to calculate the Massachusetts speeding fine, f , based on the number of miles per hour, m , over the speed limit when $1 \leq m \leq 10$.

← → ↶ ↷ ✖

| | | | | | | | | | | | |
|--|---|---|---------------------------|-------------------|-------------------|-----|---|------------------|---------------------------|-------|---|
| 1 | 2 | 3 | f | m | | | | | | | |
| 4 | 5 | 6 | + | - | × | ÷ | | | | | |
| 7 | 8 | 9 | < | ≤ | = | ≥ | > | | | | |
| 0 | . | - | $\frac{\square}{\square}$ | \square^\square | \square_\square | () | | $\sqrt{\square}$ | $\sqrt[\square]{\square}$ | π | i |
| sin cos tan arcsin arccos arctan | | | | | | | | | | | |

For this item, a full-credit response (1 point) includes

- $f = 100$, and equivalent responses.

For this item, a no-credit response (0 points) includes none of the features of a full-credit response.

3.

Part C

Create an equation to calculate the Massachusetts speeding fine, f , based on the number of miles per hour, m , over the speed limit when $m > 10$.

← → ↶ ↷ ✖

| | | | | | | | | | | | |
|---|---|---|---------------------------|-------------------|-------------------|--------|--------|------------------|---------------------------|-------|---|
| 1 | 2 | 3 | f | m | | | | | | | |
| 4 | 5 | 6 | + | - | × | ÷ | | | | | |
| 7 | 8 | 9 | < | ≤ | = | ≥ | > | | | | |
| 0 | . | - | $\frac{\square}{\square}$ | \square^\square | \square_\square | () | | $\sqrt{\square}$ | $\sqrt[\square]{\square}$ | π | i |
| | | | sin | cos | tan | arcsin | arccos | arctan | | | |

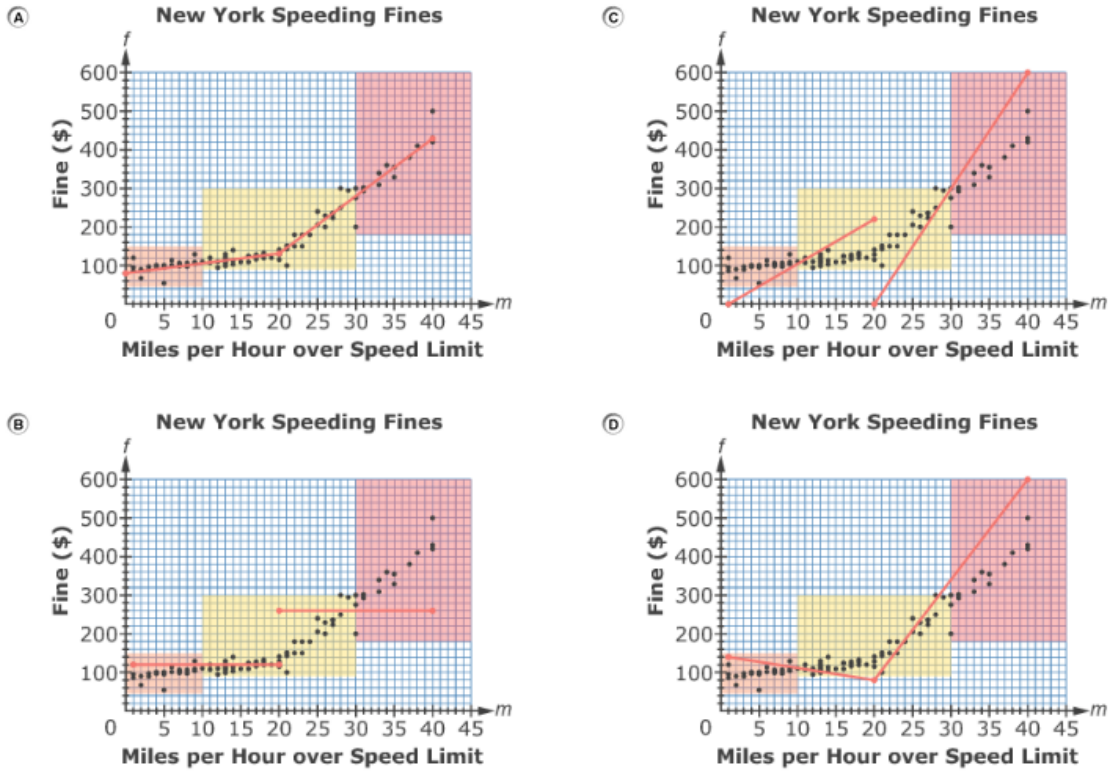
For this item, a full-credit response (1 point) includes

- $f = 100 + 10(m - 10)$ or $f = 10(m - 10) + 100$ or $f = 10m$, and equivalent responses.

For this item, a no-credit response (0 points) includes none of the features of a full-credit response.

4.

Select the piecewise linear function that is the best model for the data.



For this item, a full-credit response includes (1 point) includes

- option A.

5.

Part B

Using your model from part A, create an equation to calculate the speeding fine, f , based on the number of miles per hour, m , over the speed limit when $1 \leq m \leq 20$.

This equation will be the start of the proposed new model for the New York speeding fine system.

← → ↶ ↷ ✖

| | | | | | | | | | | | |
|--|---|---|---------------------------|-------------------|-------------------|----|---|------------------|---------------------------|-------|---|
| 1 | 2 | 3 | f | m | | | | | | | |
| 4 | 5 | 6 | + | - | × | ÷ | | | | | |
| 7 | 8 | 9 | < | ≤ | = | ≥ | > | | | | |
| 0 | . | - | $\frac{\square}{\square}$ | \square^\square | \square_\square | () | | $\sqrt{\square}$ | $\sqrt[\square]{\square}$ | π | i |
| sin cos tan arcsin arccos arctan | | | | | | | | | | | |

For this item, a full-credit response (1 point) includes

- writing an equation with a slope ranging between 1 and 3, AND a y-intercept ranging between 80 and 100
- OR
- writing an equation that matches the (correct or incorrect) line graphed as the first piece of item number 1435.

For example,

- $f = 2m + 90$

For this item, a no-credit response (0 points) includes none of the features of a full-credit response.

For example,

- $f = 15.5m - 201.5$

6.

Part C

Using your model from part A, create an equation to calculate the speeding fine, f , based on the number of miles per hour, m , over the speed limit when $m > 20$.

This equation will complete the proposed new model for the New York speeding fine system.

← → ↶ ↷ ✖

| | | | | | | | | | | | |
|---|---|---|---------------------------|-------------------|-------------------|--------|--------|------------------|---------------------------|-------|---|
| 1 | 2 | 3 | f | m | | | | | | | |
| 4 | 5 | 6 | + | - | × | ÷ | | | | | |
| 7 | 8 | 9 | < | ≤ | = | ≥ | > | | | | |
| 0 | . | - | $\frac{\square}{\square}$ | \square^\square | \square_\square | () | | $\sqrt{\square}$ | $\sqrt[\square]{\square}$ | π | i |
| | | | sin | cos | tan | arcsin | arccos | arctan | | | |

For this item, a full-credit response (1 point) includes

- writing an equation with a slope ranging between 13 and 18, AND a y -intercept ranging between -260 and -120
OR
- writing an equation that matches the (correct or incorrect) line graphed as the second piece of item number 1435.

For example,

- $f = 15m - 170$

For this item, a no-credit response (0 points) includes none of the features of a full-credit response.

For example,

- $f = 2m + 95$

7.

The NDA claims that the proposed new model for the New York speeding fine system is fairer than the current system.

Do you agree or disagree with the claim? Explain your reasoning using specific examples from this task.

For this item, a full-credit response (2 points) includes

- agreeing with the claim
AND
- justifying the response by citing at least one comparison between values used in the two systems.

For example,

- “I agree. In the current system, a driver who is ticketed for speeding by 11 mph could be fined \$300. A driver who is ticketed for speeding by 30 mph could be fined \$90. In the new system, any driver who speeds by 11 mph would pay \$112 and a driver who speeds by 30 mph would pay \$280. It is fairer that drivers who speed by the same amount will pay the same fine and the fine will increase as the excess speed increases.”

Continued on next page

For this item, a partial-credit response (1 point) includes

- agreeing with the claim
AND
- justifying the response WITHOUT citing any examples

OR

- justifying the incorrect response by citing examples from previous incorrect work in any of the previous items.

For example,

- “I agree. It is fairer that drivers who are ticketed for the same excess speed will pay the same fine and the fine will increase as the excess speed increases.”

For this item, a no-credit response (0 points) includes none of the features of a full- or partial-credit response.

For example,

- “I agree.”

This item is not graded on spelling or grammar.