Smarter Balanced Assessment Consortium:

Practice Test Scoring Guide

Grade 8 Braille Performance Task

In this task, you will use data to create a model that shows the relationship between animal body weight and pulse rate measures. Then you will examine additional data to evaluate your model.

A study states that the relationship between an animal's pulse rate and body weight is approximately linear. The study data are below.

Table 1. Average Body Weight and Average Pulse Rate of Seven Animals

Animal	Average Body Weight (in kilograms)	Average Pulse Rate (in beats per minute)
Cat	3	130
Goat	28	75
Sheep	56	75
Pig	192	95
Ox	362	48
Cow	465	66
Horse	521	34

1.

Which is the best linear model of the data from Table 1?
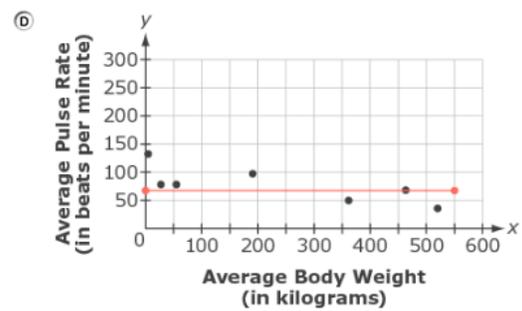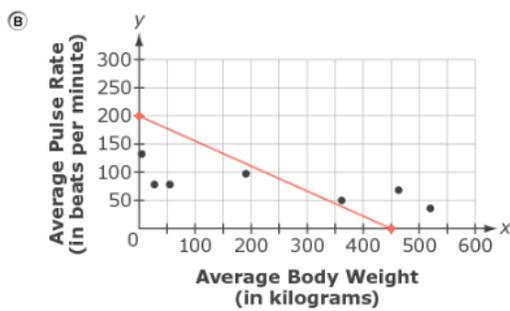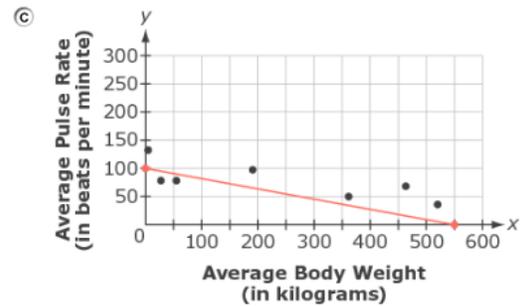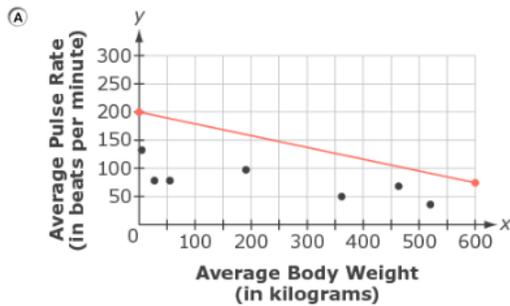
For this item, a full-credit response (1 point) includes

- option C.

2.

What is the equation of the line you drew in Item 1?

1	2	3	x	y
4	5	6	+	-	×	÷
7	8	9	<	≤	=	≥	>
0	.	-								π

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

- an equation based on the graph drawn in the previous item, with a *y*-intercept between 70 and 130

  AND
- an equation based on the graph drawn in the previous item, with a slope between −1/4 and −1/17.

For example:

- $y = -0.11x + 102$

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

- an equation based on the graph drawn in the previous item, with a *y*-intercept between 70 and 130

  OR

- an equation based on the graph drawn in the previous item, with a slope between $-1/4$ and $-1/17$

  OR

- a two-variable, linear equation with a *y*-intercept consistent with the line drawn in item 1

  OR

- a two-variable, linear equation with a slope consistent with the line drawn in item 1

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

3.

> Interpret the slope of the line from Item 1 in the context of the situation.
>
> Type your answer in the space provided.

[text entry box]

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

- interpreting the slope from the last item as a rate of change (using "…decrease in pulse rate … for every kilogram increase in weight" language) AND
- an acceptable pulse rate and weight, based on the (correct or incorrect) response to item 1.

For example,

- "There is a 0.17 decrease in average pulse rate for every 1 kg increase in weight."

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

- interpreting the slope from the last item as a rate of change (using "…decrease in pulse rate … for every kilogram increase in weight" language) OR
- an acceptable pulse rate and weight, based on the (correct or incorrect) response to item 1.

For example,

- "It has a rate of 1/6."

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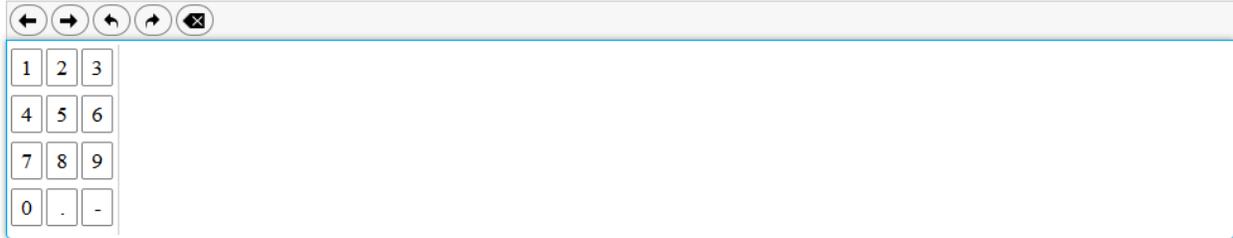
For example,

- "The slope of the line is the rate."

4.

Part A

Based on the equation from Item 2, predict the average pulse rate in beats per minute, of an animal that weighs 6000 kilograms.

1	2	3
4	5	6
7	8	9
0	.	-

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

- a value that is the correct prediction based on the equation given in item 2.

For example,

- −558 (based on $y = -0.11x + 102$)

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

5.

Part B

Explain whether the predicted average pulse rate in Part A is reasonable in the context of the situation.

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

- indicating that the value is not reasonable

  AND

- identifying the issue of a negative average pulse rate

  OR

- indicating that the value is reasonable based on an incorrect response for Part A and identifying the issue of why it is a reasonable value.

For example,

- "A pulse of –558 per minute is not reasonable because it is not possible to have a negative average pulse rate."

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

- indicating that the value is not reasonable
  OR
- identifying the issue of a negative average pulse rate.

For example,

- "A pulse of −558 per minute is not reasonable."

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

For example,

- "The pulse is not reasonable."

This item is not graded on spelling or grammar.

6.

The body weight and pulse rate of a guinea pig and rabbit are given in the table below.

Animal	Average Body Weight (in kg)	Average Pulse Rate (in beats per minute)
Guinea Pig	1	250
Rabbit	2.5	265

If the study had included these data, would this change the model relating average body weight and average pulse rate? How do you know?

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

- showing the difference between actual pulse rate and the predicted pulse rate by referencing the equation from item 2
  OR
- arguing the difference between actual pulse rate and the predicted pulse rate by referencing the line drawn in item 1.

For example,

- "Yes. The model will need to be changed, because the new data points do not follow the trend suggested by the equation in item 2."

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

- stating that the model will need to be changed with no support from the data.

For example,

- "The model will need to change."

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

For example,

- "The model should not change."

This item is not graded on spelling or grammar.