# RELEASED TEST ITEMS 

Sample Student Work
Illustrating LEAP Achievement Levels
Fall 2012

## Mathematics

## Grade 8-Mathematics Multiple-Choice Items

Reporting Category:
Grade 8 Mathematics
GLE 26:

Measurement, Data, and Geometry

Predict, draw, and discuss the resulting changes in lengths, orientation, and angle measures that occur in figures under a similarity transformation (dilation)

Advanced
calculator optional

## Achievement Level:

Calculator:

The diagram below shows a small triangle that was dilated through point $P$ by a factor of 1.75 to create a larger triangle.


What is the value of $x$ ?
A. 24
B. 27
C. 48
D. 84

## * correct answer

This item would most likely be answered correctly by students who score at the Advanced level. The item requires students to identify an angle measure of a corresponding angle of a similar triangle. Students who select option A may focus on the visual aspect of the smaller triangle appearing to be half the size of the larger triangle, so they divide 48 by 2 . Students who select option B incorrectly use the scale factor of 1.75 to divide 48 by 1.75 . Students who select option D also incorrectly use the scale factor of 1.75 but multiply 48 by 1.75. Students who correctly select option $C$ recognize that the image produced by a dilation is similar to the original figure and that corresponding angles of similar figures have equal angle measures.

Reporting Category:

## Grade 8 Mathematics

GLE 38:

Achievement Level:
Calculator:

Measurement, Data, and Geometry

Sketch and interpret a trend line (i.e., line of best fit) on a scatterplot
Mastery
calculator optional

The scatter plot and line of best fit below show the average price of a gallon of gasoline, in dollars, for a 20-year span.


The data for year 0, year 1, and year 20 will be removed. How will this affect the line of best fit?
A. The line of best fit will not be affected.
B. The line of best fit will become horizontal.
C. The $y$-intercept of the line of best fit will increase.

* D. The $y$-intercept of the line of best fit will decrease.


## * correct answer

This item would most likely be answered correctly by students who score at the Mastery level and above. The item requires students to describe the effect that removing three data points from a scatter plot has on a line of best fit. Students who select option A incorrectly conclude that points lying the greatest distance from the line of best fit have little to no effect on its orientation. Students who select option B incorrectly conclude that removing the data points that lie the

Reporting Category:
Grade 8 Mathematics GLE 13:

## Achievement Level:

## Calculator:

Ratio, Proportion, and Algebra

Switch between functions represented as tables, equations, graphs, and verbal representations, with and without technology

## Basic

calculator optional

Devin sells live crawfish at a local market. The graph below shows the price (y), in dollars, for $x$ pounds of live crawfish.


Which equation describes the relationship between the price $(y)$ and the number of pounds $(x)$ of live crawfish shown in the graph?
A. $y=-\frac{3}{2} x$
B. $y=-\frac{2}{3} x$
C. $y=\frac{2}{3} x$

* D. $y=\frac{3}{2} x$

[^0]Reporting Category:
Number System

## Grade 8 Mathematics

GLE 1:

Achievement Level:
Calculator:

Compare rational numbers using symbols (i.e., $<, \leq$, $=, \geq,>$ ) and position on a number line

## Approaching Basic

calculator optional

## Use the table below to answer question $\mathbf{X X}$.

Daily Outside Temperatures

| Day | Temperature <br> (degrees Fahrenheit) |
| :---: | :---: |
| 1 | -16 |
| 2 | 8 |
| 3 | -1 |
| 4 | 18 |

Aidan recorded the outside temperature each of four days. Which list shows the temperatures in order from the highest outside temperature to the lowest outside temperature?
A. $-16,-1,8,18$
*B. $18,8,-1,-16$
C. $-1,-16,8,18$
D. $18,8,-16,-1$

## * correct answer

This item would most likely be answered correctly by students who score at the Approaching Basic level and above. The item requires students to order temperatures shown in a table from highest to lowest. Students who select option A find the order from lowest to highest instead of highest to lowest. Students who select option C think that -1 is a smaller number than -16 . Students who select option D find the order from highest to lowest and think that -1 is a smaller number than -16 . Students who correctly select option B order the numbers from highest to lowest. One tool a student could use to accomplish this is plotting the points on a number line.

## Grade 8-Mathematics Constructed-Response Item

The following pages present a constructed-response item, a scoring rubric, and examples of student work at scores of 0 to 4 . The item is shown below, and the scoring rubric can be found on page 12. The Reporting Category for this item is Ratio, Proportion, and Algebra. This item requires students to find unit/ cost rates and apply them in real-life problems. Calculator use is allowed on all constructed-response items.

## Write the answer to question $X X$ in the spaces below.

Two 15-gallon containers of water are shown below with their gross weights in pounds.


Container A 122 pounds


Container B 82 pounds

The containers each weigh 2 pounds when they are empty. One of the containers is completely full of water. How many gallons of water are in both containers combined? Show your work in the space below.

Number of gallons: $\qquad$


[^0]:    * correct answer

