



**NEW ENGLAND
COMMON ASSESSMENT PROGRAM**

**Released Items
2013**

**Grade 7
Mathematics**

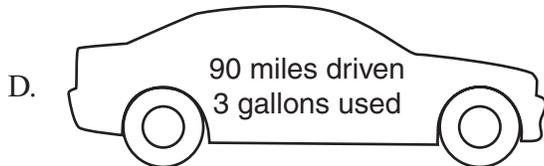
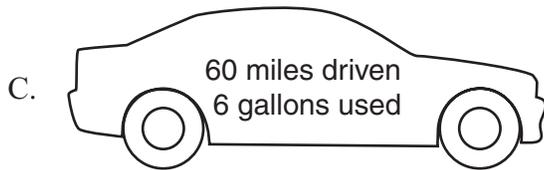
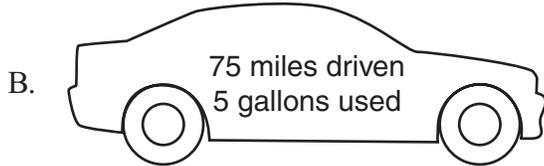
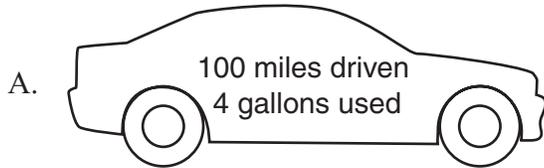
Mathematics



Items with this symbol were selected from Session One—no calculators or other mathematics tools allowed.



- 1 Which car had the greatest number of miles driven per gallon used?



- 2 The value of \square is greater than 1. The value of \triangle is greater than 0 and less than 1.

Which expression has the **greatest** value?

A. $\triangle - \square$

B. $\triangle \div \square$

C. $\square \times \triangle$

D. $\square \div \triangle$



- 3 Renee uses vinegar and water to make a cleaning mixture. The amount of vinegar in the mixture is $\frac{1}{8}$ the amount of water. Renee put 10 cups of water in a bucket. How much vinegar should she add to the water?

A. $1\frac{1}{4}$ cups

B. $1\frac{2}{5}$ cups

C. $1\frac{1}{2}$ cups

D. $1\frac{4}{5}$ cups



4 A car dealer has 75 cars, 23 trucks, and 42 minivans in stock. What percent of the vehicles in stock are minivans?

- A. 3%
- B. 30%
- C. 33%
- D. 42%

5 A supermarket charges \$4 per pound for grapes and \$4 per pound for cherries. Gretchen buys some grapes and some cherries.

- She buys 24 ounces of grapes.
- She buys 20 ounces of cherries.

What is the total cost of the grapes and the cherries Gretchen buys?

[1 pound = 16 ounces]

- A. \$ 5
- B. \$ 6
- C. \$10
- D. \$11



6 This table shows the relationship between the fee to park in a garage and the amount of time parked in the garage.

Parking Fees

Time	Fee (in dollars)
Up to 1 hour	2.00
Up to $1\frac{1}{2}$ hours	2.75
Up to 2 hours	3.50
Up to $2\frac{1}{2}$ hours	4.25

The pattern continues. What is the fee to park in the garage for up to 5 hours?

- A. \$ 5.00
- B. \$ 8.00
- C. \$ 8.50
- D. \$10.00

7 Jessica had x dollars. She bought 3 movie tickets for \$8 each. Which expression represents the amount, in dollars, that Jessica has left?

- A. $3(8 - x)$
- B. $3(x - 8)$
- C. $x - 3(8)$
- D. $3x - 8$

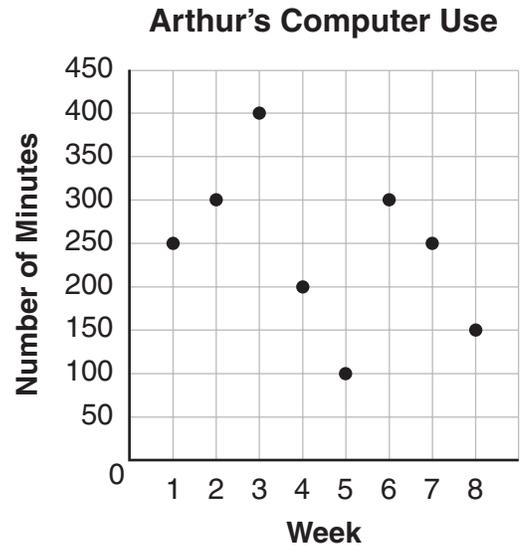
8 Gabriel is hiking up a mountain with friends. Their distance, d , in miles from the summit, is represented by the equation $d = 3.6 - 1.2t$, where t is time in hours. Gabriel and his friends have been hiking for 2.5 hours. How many miles are they from the summit?

- A. 1.1
- B. 0.8
- C. 0.6
- D. 0.5

9 Chet exercised for 45 minutes. Sal exercised for 10 minutes less than Chet exercised. Which equation **cannot** be used to find t , the time in minutes Sal exercised?

- A. $10 = 45 + t$
- B. $t + 10 = 45$
- C. $45 - 10 = t$
- D. $45 - t = 10$

10 This graph shows the number of minutes Arthur used a computer each week over the past 8 weeks.



What is the range of the number of minutes Arthur used the computer?

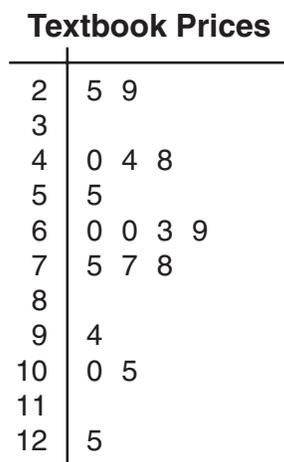
- A. 400 minutes
- B. 300 minutes
- C. 150 minutes
- D. 100 minutes



- 11 Write a number that could go in the box to make this statement true.

$$\frac{8}{11} < \square < 75\%$$

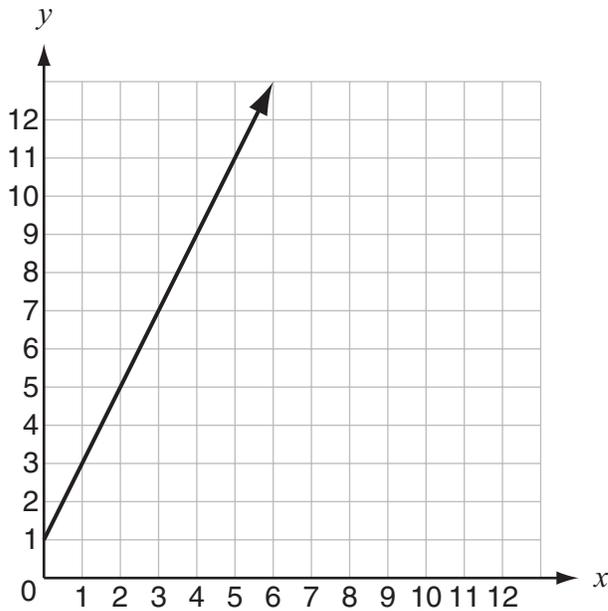
- 12 This stem-and-leaf plot shows the price of each of the textbooks used at Jefferson Middle School.



Key	
2	5 represents \$25

What is the median price, in dollars, of the textbooks?

- 13 Look at this graph.

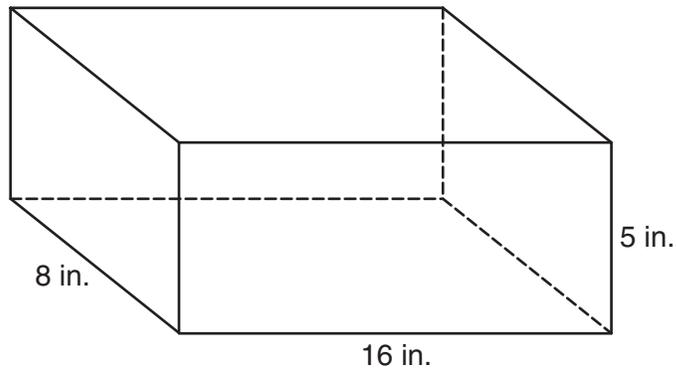


- a. What is the value of y when $x = 5$?
- b. Use words or symbols to write a rule for the pattern shown by the graph.
- 14 Nelly recorded the distance she ran for each of the 31 days in July. She used the data from all 31 days to calculate the information shown in this table.

Minimum distance	0.5 mile
Maximum distance	4.0 miles
Mean distance	2.1 miles
Median distance	1.8 miles
Mode of distances	1.5 miles

What is the total number of miles that Nelly ran during the month of July? Show your work or explain how you know.

- 15 Seth uses rectangular shoe boxes like the one shown below for storing his baseball cards.

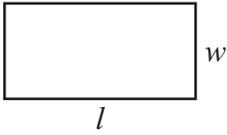


- What is the area, in square inches, of the bottom of this shoe box?
- What is the volume, in cubic inches, of this shoe box?
- A second box has the same volume, but it has a height of only 4 inches. What could be the length and width, in inches, of the second box? Show your work or explain how you know.

New England Common Assessment Program Mathematics Reference Sheet – Grade 7

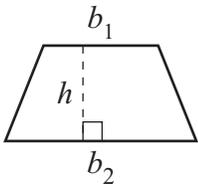
Use the information below as needed to answer questions on the mathematics test.

Rectangle



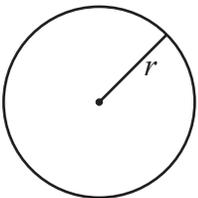
$$\text{Area} = lw$$

Trapezoid



$$\text{Area} = \frac{1}{2} h(b_1 + b_2)$$

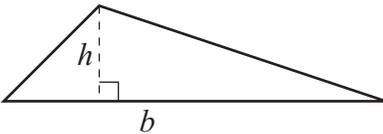
Circle



$$\text{circumference} = 2\pi r$$

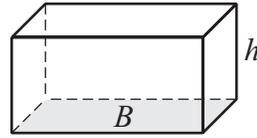
$$\pi \approx 3.14$$

Triangle



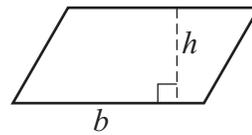
$$\text{Area} = \frac{1}{2} bh$$

Rectangular Prism



$$\begin{aligned} \text{Volume} &= \text{area of the base} \cdot \text{height} \\ &= Bh \end{aligned}$$

Parallelogram



$$\text{Area} = bh$$

Mean: The mean of a data set is the sum of all the values divided by the number of values.

Median: The median of a data set is the middle value or average of the two middle values when the values are arranged in numerical order.

Mode: The mode of a data set is the value that occurs most often.