



**NEW ENGLAND  
COMMON ASSESSMENT PROGRAM**

**Released Items  
2006**

**Grade 7  
Mathematics**

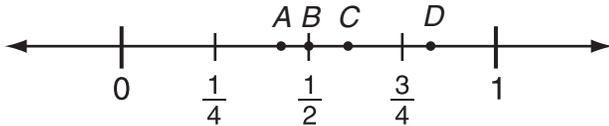
# Mathematics



Item selected from Session One—no calculators or other mathematics tools allowed.



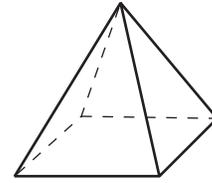
- 1 Look at this number line.



Which point best represents  $\frac{6}{10}$ ?

- A. point *A*
  - B. point *B*
  - C. point *C*
  - D. point *D*
- 2 Which two words describe all equiangular triangles?
- A. right, equilateral
  - B. right, isosceles
  - C. acute, equilateral
  - D. acute, scalene

- 3 The base of this pyramid is a square.

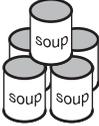
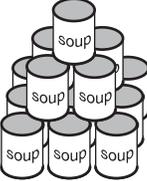
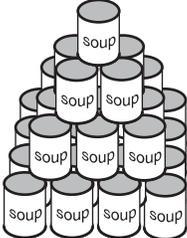


Which statement about the pyramid is true?

- A. It has exactly 4 faces.
  - B. It has exactly 5 edges.
  - C. It has exactly 6 faces.
  - D. It has exactly 8 edges.
- 4 Jenn is making lemonade for a picnic.
- Each lemon has about 5 fluid ounces of juice.
  - She needs  $1\frac{1}{2}$  cups of juice.
- How many lemons does Jenn need?  
[1 cup = 8 fluid ounces]
- A. 2 or 3
  - B. 4 or 5
  - C. 6 or 7
  - D. 8 or 9



5 Look at the diagram below.

Display Number	Display	Number of Soup Cans
1		1
2		5
3		14
4		30

If this pattern continues, how many soup cans will be in Display Number 5?

- A. 25
- B. 46
- C. 55
- D. 60

6 Look at this schedule of interview times.

### Schedule

Interview	Time
1st	1:00
2nd	1:40
3rd	2:20
4th	3:00

If the pattern continues, at what time is the 5th interview?

- A. 3:20
- B. 3:40
- C. 4:00
- D. 4:20

7 The table below shows the heights and weights of four apes in a study.

### Ape Study

Height (in inches)	Weight (in pounds)
60	110
66	143
68	154
72	176

Kimo and Miko are two other apes in the study. Kimo is one inch taller than Miko. How much more would Kimo be expected to weigh than Miko?

- A. 1.83 pounds
- B. 2.44 pounds
- C. 2.75 pounds
- D. 5.50 pounds

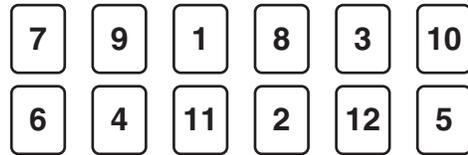
- 8 Look at this equation.

$$c = r - 0.8r + d$$

What is the value of  $c$  when  $r = 2000$  and  $d = 250$ ?

- A. 200
  - B. 650
  - C. 1350
  - D. 1750
- 9 Aaron's goal is to read an average (mean) of 26 pages per day for 6 days. During the first 5 days he read 23 pages per day. How many pages must he read on the 6th day to reach his goal?
- A. 19
  - B. 26
  - C. 29
  - D. 41

- 10 Look at these tiles.

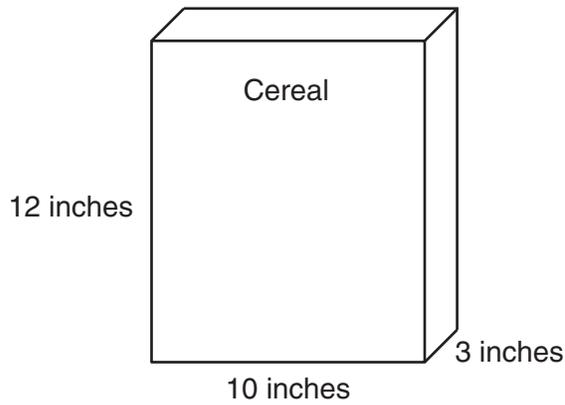


Haley puts these 12 tiles in a bag and shakes the bag. Then she picks a tile at random. What is the probability she picks a tile that is a multiple of 3?

- A.  $\frac{8}{4}$
- B.  $\frac{8}{12}$
- C.  $\frac{4}{8}$
- D.  $\frac{4}{12}$



- 11 Erasers cost \$0.15 each, including tax. What is the greatest number of erasers Diego can buy with \$3.00?
- 12 A large box of cereal measures 10 inches wide, 12 inches high, and 3 inches deep.

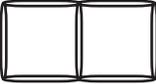
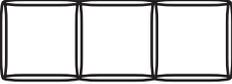
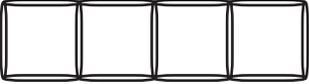


A regular box of cereal has half the volume of the large box of cereal. What could the dimensions of the regular box be?

- 13 Travis has a photograph that is 4 inches wide and 6 inches tall.
- Travis enlarges the photograph proportionally so that it is 16 inches wide. How tall is it?
  - Can Travis enlarge the photograph proportionally to 8 inches by 10 inches? Explain your answer.

- 14 Jocelyn used toothpicks to make the first four figures in this pattern.

**Jocelyn's Pattern**

Figure 1		4 Toothpicks
Figure 2		7 Toothpicks
Figure 3		10 Toothpicks
Figure 4		13 Toothpicks

- How many toothpicks will Jocelyn need for Figure 5?
- Write a rule for the number of toothpicks needed for Figure  $n$ .



15 Look at this diagram.



**Ms. Heron's Farmland**

Ms. Heron gave her son and grandchildren 12 acres of farmland.

- She gave her son half of the 12 acres.
  - She split the rest equally among the 3 grandchildren.
- a. How many acres did Ms. Heron give to each grandchild? Show your work or explain how you know.
- b. What fraction of the 12 acres did each grandchild receive? Show your work or explain how you know.

## Grade 7 Mathematics Released Item Information

Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
No Tools Allowed	✓				✓						✓				✓
Content Strand <sup>1</sup>	NO	GM	GM	GM	FA	FA	FA	FA	DP	DP	NO	GM	GM	FA	NO
GLE Code	6-2	6-1	6-3	6-7	6-1	6-1	6-2	6-3	6-2	6-5	6-4	6-6	6-5	6-1	6-1
Depth of Knowledge Code	2	1	1	2	2	2	2	1	2	2	1	2	3	2	2
Item Type <sup>2</sup>	MC	SA	SA	SA	SA	CR									
Answer Key	C	C	D	A	C	B	D	B	D	D					
Total Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	2	2	4

<sup>1</sup>Content Strand: NO = Numbers & Operations, GM = Geometry & Measurement, FA = Functions & Algebra, DP = Data, Statistics, & Probability

<sup>2</sup>Item Type: MC = Multiple Choice, SA = Short Answer, CR = Constructed Response