NEW ENGLAND
COMMON ASSESSMENT PROGRAM

Released Items
2007

Grade 7
Mathematics

Mathematics

1 Which statement is true?

    A. $\frac{4}{9} > 0.48$

    B. $\frac{3}{16} = 0.48$

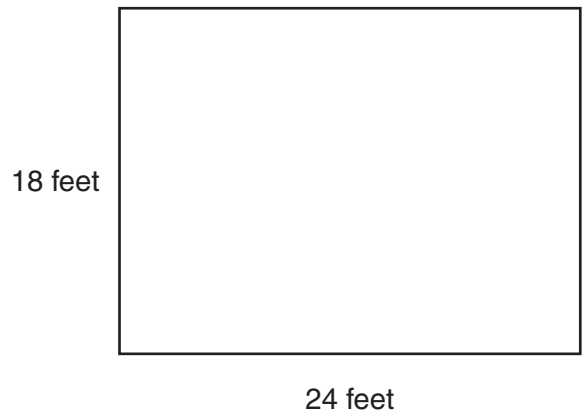   C. $\frac{8}{15} < 0.48$

    D. $\frac{6}{11} > 0.48$

2 Let y be a number greater than 0 and less than 1. Which expression has the **greatest** value?

    A. $y \div 2$

    B. $2 \div y$

    C. $y \bullet y$

    D. $2 \bullet y$

3 Denise is building a fence around her 18-foot by 24-foot rectangular garden.

Denise's Garden

18 feet

24 feet

She will

- put a post at each corner,
- put some posts along the sides, and
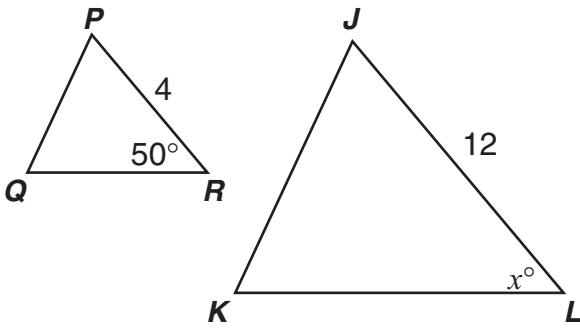- space the posts equally around the garden.

What is the greatest possible distance between each post and the next post?

    A.   8 feet

    B.   6 feet

    C.   3 feet

    D.   2 feet

4 Lyle made a prism with rectangular bases. How many **edges** does Lyle's prism have?

A. 4

B. 6

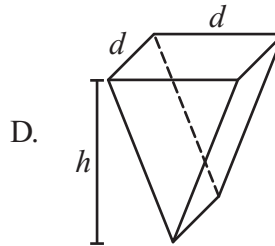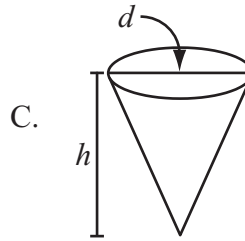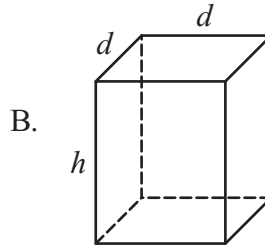C. 12

D. 16

5 Triangle *PQR* is similar to triangle *JKL* ($\triangle PQR \sim \triangle JKL$). The triangles are not drawn to scale.

What is the value of *x*?

A. 150

B. 100

C. 58

D. 50

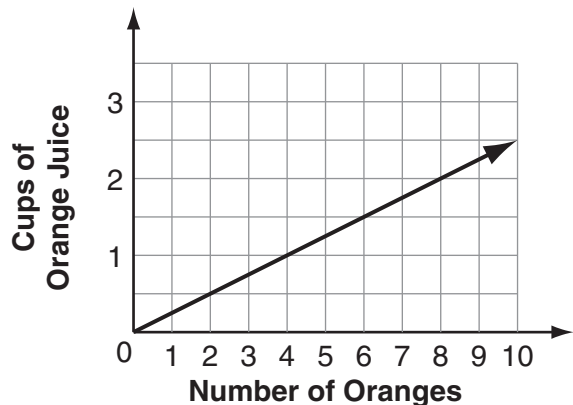**6** Which container below holds the most water?

A.

B.

C.

D.
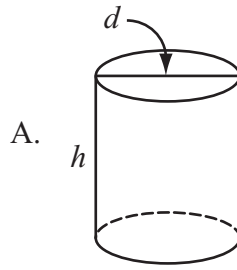
7 Gloria's couch is 87 inches long. How long, in feet, is Gloria's couch? [1 foot = 12 inches]

A. $7\frac{1}{4}$ feet

B. $7\frac{7}{12}$ feet

C. $8\frac{7}{10}$ feet

D. $8\frac{3}{4}$ feet

8 This graph shows the number of cups of orange juice that can be made from different numbers of oranges.

Cups of Orange Juice vs **Number of Oranges**

Which table shows the same relationship as the graph?

A.

Number of Oranges	Cups of Orange Juice
1	2
2	4
3	6
4	8

B.

Number of Oranges	Cups of Orange Juice
2	1
4	2
6	3
8	4

C.

Number of Oranges	Cups of Orange Juice
1	4
2	8
3	12
4	16

D.

Number of Oranges	Cups of Orange Juice
4	1
8	2
12	3
16	4

9 This chart shows the target heart rate for people of different ages.

Target Heart Rate

Age	Target
20	160
30	152
40	144
50	136
60	128

When a person's age increases **one year**, by how much does the target heart rate decrease?

A. 0.8
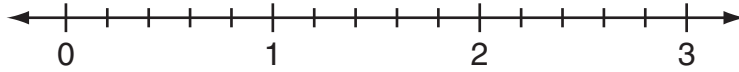B. 1.25
C. 8
D. 10

10 Look at these number sentences.

$$\square + \triangle + \triangle = \mathbf{11}$$
$$\square + \square + \square = \mathbf{9}$$

Each $\square$ represents the same number. Each $\triangle$ represents the same number. What is the value of $\square + \triangle$?

A. 5
B. 6
C. 7
D. 8

3

11 Look at this number line.

Use an X to label 0.75 on the number line.

12 The lengths of two sides of an **isosceles** triangle are 5 meters and 7 meters. What are all the possible lengths, in meters, of the third side?

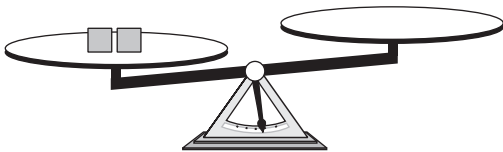**❶❸** The correct price of a CD at a store is $8.99. The CDs were incorrectly sold for $8.75 each. If 100 CDs were sold at the incorrect price, how much money did the store lose altogether?
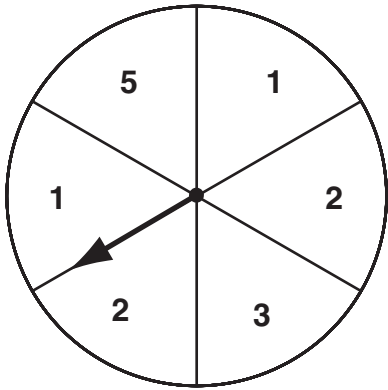
❶❹ The scale shown below is balanced.
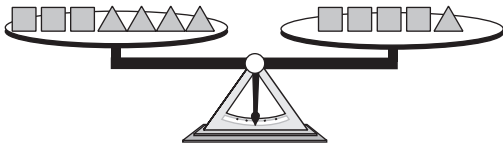
How many triangles should be put on the right side of the scale below so that it balances? Explain your answer.

⑮ Pat and Ron are making rules for a game using this spinner.

Rule 1: If the arrow lands on an even number, Pat gets one point.

Rule 2: If the arrow lands on an odd number, Ron gets one point.

a. What is the probability that Pat gets one point on a spin?

b. A game is fair when both players have equal chances of getting one point. Explain why this is **not** a fair game.

Pat and Ron keep Rule 1 the same but want a new Rule 2.

c. Write a new Rule 2 to make the game fair. **Do not change** the numbers on the spinner. Explain how your rule makes the game fair.

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[1]	NO	NO	NO	GM	GM	GM	GM	FA	FA	FA	NO	GM	NO	FA	DP
GLE Code	6-2	6-3	6-4	6-3	6-5	6-6	6-7	6-1	6-2	6-4	6-2	6-1	6-4	6-4	6-5
Depth of Knowledge Code	1	2	3	2	1	2	1	1	2	2	1	1	2	3	3
Item Type[2]	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	SA	SA	SA	SA	CR
Answer Key	D	B	B	C	D	B	A	D	A	C					
Total Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	2	2	4

[1]Content Strand: NO = Numbers & Operations, GM = Geometry & Measurement, FA = Functions & Algebra, DP = Data, Statistics, & Probability

[2]Item Type: MC = Multiple Choice, SA = Short Answer, CR = Constructed Response