New England Common Assessment Program

Released Items 2007

Grade 7 Mathematics

Mathematics

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

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. $y \div 2$

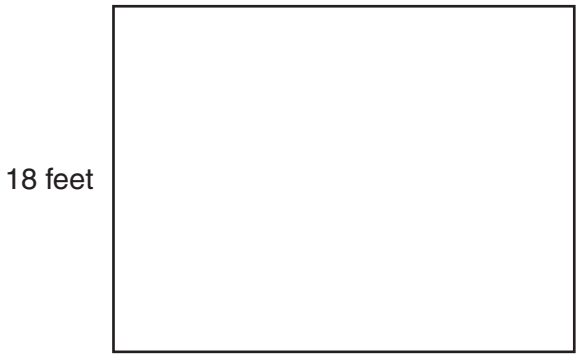
B. $2 \div y$

C. $y \cdot y$

D. $2 \cdot y$

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

Denise's Garden



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?

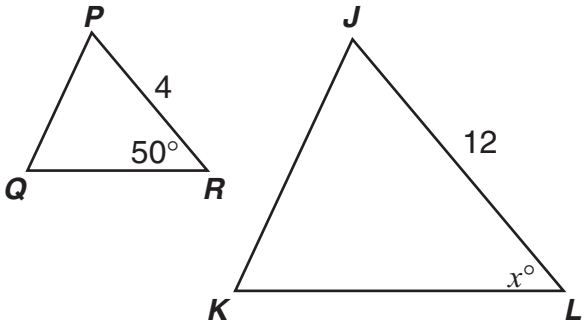
A. 4

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

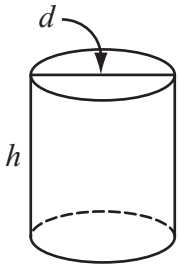
B. 100

C. 58

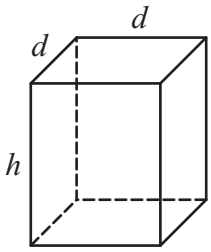
D. 50

6 Which container below holds the most water?

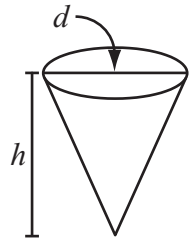
A.



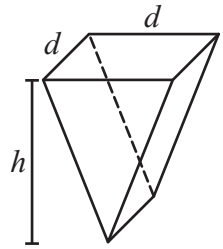
B.



C.



D.



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

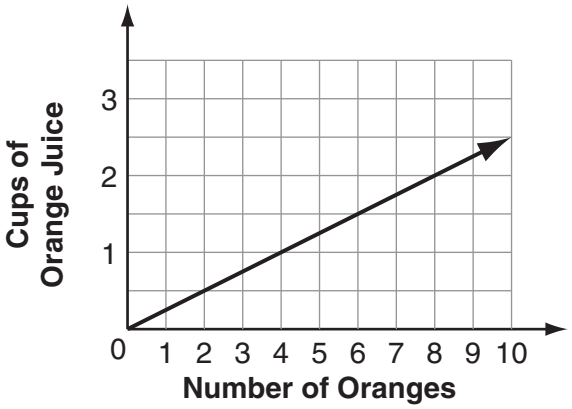
A. $7\frac{1}{4}$ feet

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.



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

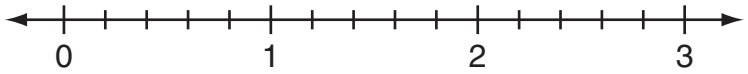
10 Look at these number sentences.

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

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

11 Look at this number line.

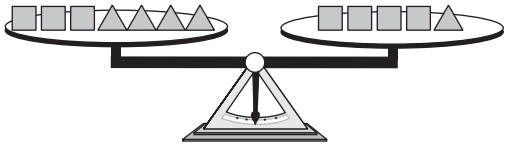


Use an X to label 0.75 on the number line.

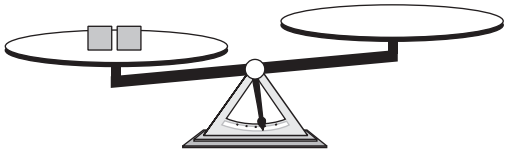
12 The lengths of two sides of an **isosceles** triangle are 5 meters and 7 meters. What are all the possible lengths, in meters, of the third side?

13 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?

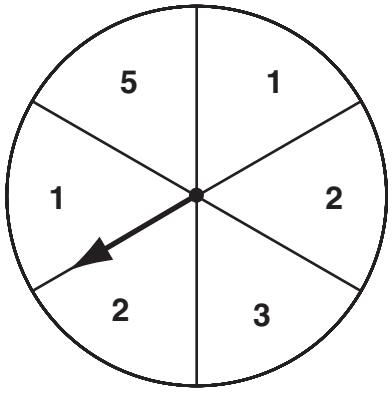
14 The scale shown below is balanced.



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