

**Grade 6**  
**6.G (Geometry)**

# *K* Smart Workbook™

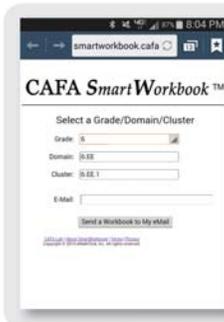
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Fully Aligned to  
**Common Core  
State Standards**

 **eMathTest**

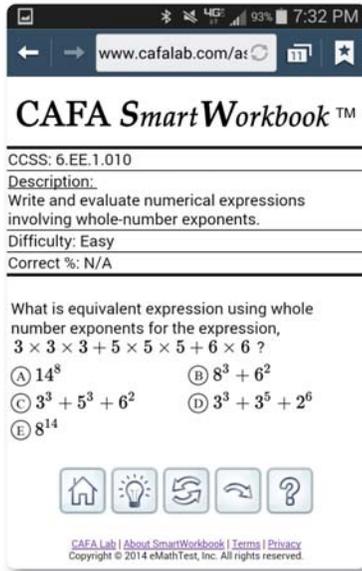
# CAFA SmartWorkbook



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Get **Correct Answer** and **Solution Steps** for the item



Practice the variants (numbers and/or figures are differentiated) of the item to **achieve mastery of the item**



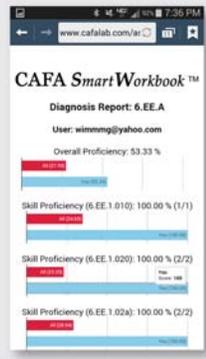
Practice other items for the standard to **achieve mastery of the standard**



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By **scanning QR code** in Exam page, one can **submit his answers and get immediate feedback** (grade, correct answers, etc) including **additional practices on the weak points** and **diagnosis report**



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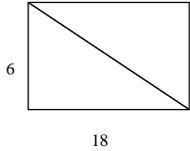
**CCSS Skill Practice : 6.G.A.1**

Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

Name: \_\_\_\_\_

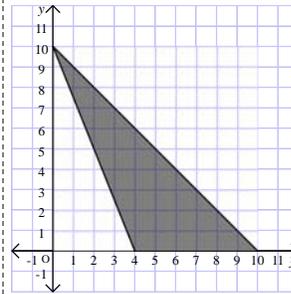
Date: \_\_\_\_\_

1. Joanne has a rectangular garden with a width of 18 feet and the length of 6 feet. In one day, she put a fence as shown below to plant flowers in one triangular garden and vegetable in the other triangular garden. What is the area of the garden with flowers in square feet?



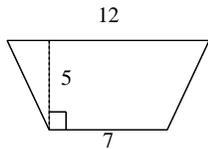
- (A) 216
- (B) 54
- (C) 108
- (D) 24
- (E) 27

2. What square unit is the area of the shaded triangle below?



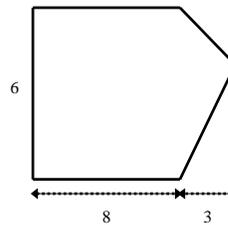
- (A) 33
- (B) 20
- (C) 30
- (D) 50
- (E) 60

3. Find the area of the following trapezoid.



- (A) 44
- (B) 41.25
- (C) 60
- (D) 95
- (E) 47.5

4. Ave cuts grass at \$1 per square yard. How much would he earn cutting the grass for the area below? All the lengths given below are in yard.



- (A) \$57
- (B) \$48
- (C) \$65
- (D) \$66
- (E) \$84

**CCSS Skill Practice : 6.G.A.2**

Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas  $V = lwh$  and  $V = bh$  to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. What is the volume of a box in cubic feet if a box has a height of 8 feet, a width of 3 feet, and a length of 2 feet?



- (A) 120      (B) 96      (C) 72  
(D) 24      (E) 48

2. Ave wanted to pour water in a cube whose side is 5 inches. How much of cubic inches of water can he pour in this cube?



- (A) 125      (B) 15      (C) 130  
(D) 25      (E) 35

3. The size of a pool is  $8\frac{1}{2}$  feet wide, 5 feet long, and  $4\frac{1}{2}$  feet high. The pool is drained and refilled every night. What cubic feet volume of water would be required to fill the pool to the rim?



- (A)  $\frac{769}{4}$       (B)  $\frac{765}{4}$       (C)  $\frac{777}{4}$   
(D)  $\frac{761}{4}$       (E)  $\frac{773}{4}$

4. A truck has a rectangular prism shape of cargo in the back. The dimensions of the cargo are 10.5 feet by 17.5 feet by 3.5 feet. Cube shaped boxes with 3.5 feet will be loaded into the cargo. How many boxes will completely fill the cargo?



- (A) 21      (B) 17      (C) 19  
(D) 15      (E) 14

**CCSS Skill Practice : 6.G.A.3**

Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. If three vertices of a rectangle are  $(-3, 3)$ ,  $(6, 3)$ , and  $(6, -6)$ , what are the coordinates of the fourth vertex?



- (A)  $(-3, 6)$                       (B)  $(-3, -6)$   
(C)  $(3, -6)$                       (D)  $(-6, -3)$   
(E)  $(-6, 3)$

2. If three vertices of a rectangle are  $(-3, 6)$ ,  $(-3, -8)$ , and  $(6, -8)$ , what is the area of this rectangle in square units?



- (A) 36                      (B) 54                      (C) 84  
(D) 126                      (E) 132

3. Fred was drawing a map for his town. He found that his house, his school, the library, and the post office make a rectangle. So, he plotted his house at  $(-3, 7)$  and the library at  $(3, -8)$ , and the sides of a rectangle in the coordinate plane are parallel to the axes. What is the perimeter of this rectangle?



- (A) 40                      (B)  $-4$                       (C) 21  
(D) 20                      (E) 42

4. Three vertices of a trapezoid are  $(-2, 4)$ ,  $(3, 4)$ , and  $(-6, -4)$ . Which of the following coordinates are possible to be the fourth vertex of a trapezoid?



- (A)  $(5, -4)$                       (B)  $(5, -3)$   
(C)  $(-4, 5)$                       (D)  $(4, -3)$   
(E)  $(4, -2)$

**CCSS Skill Practice : 6.G.A.4**

Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. Which of the following does *not* include a rectangle in its net?



- (A) Cube
- (B) Triangular prism
- (C) Square pyramid
- (D) Rectangular prism
- (E) Cone

2. What is the surface area of the following square pyramid, if the side of a square is 8 and the height of a triangle is 4?

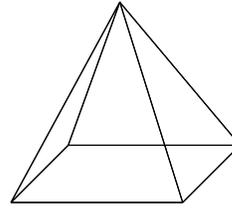


Figure not drawn to scale

- (A) 128
- (B) 192
- (C) 160
- (D) 224
- (E) 96

3. Christine wanted to wrap a gift box whose dimension is 12 inches for the length, 4 inches for the width, and 4 inches for the height. What is the surface area in square inches of this gift box?



- (A) 112
- (B) 80
- (C) 192
- (D) 224
- (E) 448

4. What is the surface area of a following triangular prism?

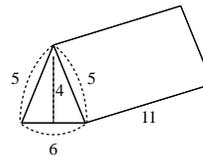


Figure not drawn to scale

- (A) 188
- (B) 200
- (C) 189
- (D) 177
- (E) 196



# Cluster Comprehensive Exam (6.G.A)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Scan the QRcode to submit answers

1. What is the area of the following polygon which consists with a right triangle and a rectangle?

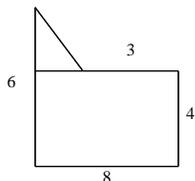


Figure not drawn to scale

- (A) 21                      (B) 56                      (C) 47  
 (D) 37                      (E) 42

2. Ian and his friends are building a scale model in order to plan out the project. The dimension of model building are  $2\frac{1}{3}$  inches high, and  $1\frac{1}{3}$  inches wide, and  $3\frac{1}{3}$  inches long. What cubic inches is the volume of a model building?

- (A)  $\frac{280}{27}$                       (B)  $\frac{287}{27}$                       (C)  $\frac{265}{27}$   
 (D)  $\frac{271}{27}$                       (E)  $\frac{293}{27}$

3. Joanne found that her house, her school, the library, and the fire station make a parallelogram on a map. If she plotted her house as  $(-3, 4)$ , her school as  $(6, 4)$ , and the library as  $(-6, -5)$ , what are the coordinates of the fire station?

- (A)  $(-5, 6)$                       (B)  $(3, -5)$   
 (C)  $(6, -5)$                       (D)  $(5, 3)$   
 (E)  $(-5, 3)$

4. Bob is making a rectangular prism stand with the length 3 feet, the width 3 feet, and the height 3 feet. He wanted to paint all sides except the base. If the paint costs \$0.51 for each square feet, how much would it cost for Bob to paint the stand?

- (A) \$27.54                      (B) \$13.77  
 (C) \$22.95                      (D) \$18.36  
 (E) \$32.13

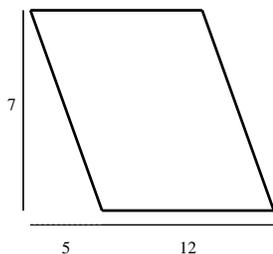


# Domain Comprehensive Exam (6.G)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Scan the QRcode to submit answers

1. What square unit is the area of the parallelogram below?



- (A) 70      (B) 119      (C) 35  
(D) 168      (E) 84

2. The system of equations is given as  $\begin{cases} 3x - 4y + 3 = 0 \\ ax + by - 9 = 0 \end{cases}$ . What are the values of  $a$  and  $b$  if there are infinitely many solutions?

- (A)  $a = -9, b = -4$       (B)  $a = 3, b = 4$   
(C)  $a = 9, b = 12$       (D)  $a = -9, b = 12$   
(E)  $a = 3, b = -4$

3. A square in the  $xy$  plane has the center  $(4, -2)$ . If the upper left corner of the square is located at  $(-2, -1)$ , then what are the coordinates of the lower right corner of the square?

- (A)  $(-2, 1)$       (B)  $(2, 1)$   
(C)  $(-2, -3)$       (D)  $(10, -1)$   
(E)  $(10, -3)$

4. Christine wanted to wrap a gift box whose dimension is 6 inches for the length, 8 inches for the width, and 4 inches for the height. What is the surface area in square inches of this gift box?

- (A) 192      (B) 208      (C) 104  
(D) 72      (E) 416

# Answer Keys

## CCSS Skill Practice

6.G.A.1 : 1.B 2.C 3.E 4.A

6.G.A.2 : 1.E 2.A 3.B 4.D

6.G.A.3 : 1.B 2.D 3.E 4.A

6.G.A.4 : 1.E 2.A 3.D 4.B

## Comprehensive Exam

6.G.A : 1.D 2.A 3.B 4.C

6.G : 1.E 2.D 3.E 4.B



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