

## Mathematics, Grade 4, Scoring Guide

### A2A4

Which number sentence shows how 7 students could share 35 pieces of candy so that each student gets the same number of pieces?

A.  $7 + 35 = \underline{\quad}$

B.  $35 - 7 = \underline{\quad}$

C.  $35 \div 7 = \underline{\quad}^*$

D.  $35 \times 7 = \underline{\quad}$

### A1B4

Which number below is the missing number in the table?

In Number	Out Number
3	24
5	40
7	
9	72

A. 35

B. 49

C. 56\*

D. 58

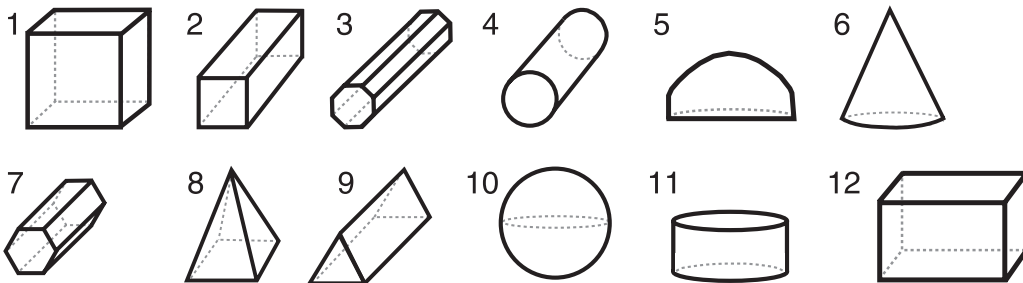
**A4A4**

It takes 3 students a total of 15 minutes to work their math problems and 4 students a total of 20 minutes to work their problems. Which statement describes how long it takes students to work their math problems?

- A.  $15 + 20 = 35$
- B. Add 15 each time.
- C. The number of minutes equals 5 plus the number of students.
- D. The number of minutes equals 5 times the number of students. \*

**G1A4**

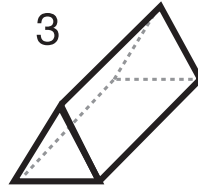
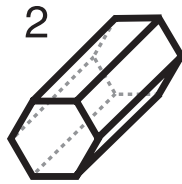
Which of the following represent rectangular prisms?



- A. 2, 9, 11
- B. 3, 4, 7
- C. 5, 6, 10
- D. 1, 2, 12 \*

**G4A4**

Which shape do these prisms have in common as a face?



- A. hexagon
- B. triangle
- C. sphere
- D. rectangle \*

**A2B4**

Mrs. Stephens' math class is studying the commutative property. She asked students to write a multiplication number sentence to show this property. Which student's number sentence shows the commutative property?

- A. Alice's number sentence:  $5 \times 25 = 125$
- B. Tom's number sentence:  $5 \times 25 = 25 \times 5$  \*
- C. Alex's number sentence:  $125 \div 5 = 25$
- D. Jankeisha's number sentence:  $5 \times 25 = 125 \div 5$

**A2B4**

Which of the examples below shows the commutative property of multiplication?

A.  $4 + 5 = 5 + 4$

B.  $4 \times 5 = 5 \times 4^*$

C.  $4 + 5 + 5 + 4$

D.  $4 \times 5 = 20$

**A2A4**

Sally has 28 bugs in her bug collection. She collected two of them yesterday. Which number sentence describes the number of bugs she had on the day before yesterday?

A.  $28 + 2 = \square$

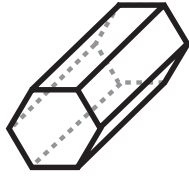
B.  $28 \times 2 = \square$

C.  $28 - 2 = \square^*$

D.  $28 \div 2 = \square$

**G1A4**

Which kind of prism does this figure represent?



- A. triangular
- B. rectangular
- C. hexagonal \*
- D. octagonal

**A3A4**

Sid has 4 purple tiles. He has two times as many purple tiles as orange tiles. He has three times as many green tiles as orange tiles.

How many green tiles does Sid have? In the space below, show how you got your answer.

\_\_\_\_\_ green tiles

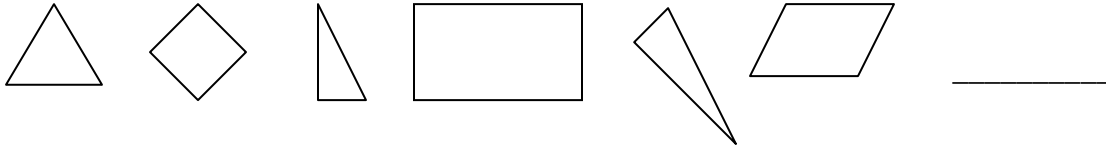
Exemplary response: 6 green tiles and work to support the answer

Scoring guide:

- 2 points – 6 green tiles and work to support the answer
- 1 point – 6 green tiles and no work to support the answer
- 0 points—Other

**A1A4**

On the line, draw the shape that would be next in this pattern.



Describe the pattern in words:

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Exemplary response: drawing of a triangle; explanation – a 3-sided shape, then a 4-sided shape; or, triangle then a quadrilateral; or 3 angles, then 4 angles; etc.

Scoring guide:

- 2 points – Correctly extends the pattern **and** an exemplary explanation
- 1 point – Correctly extends the pattern **or** an exemplary explanation
- 0 points—Other

**G3C4**

Draw a polygon with at least two lines of symmetry. Draw two lines of symmetry on the polygon.

Exemplary response: any polygonal figure that has at least 2 lines of symmetry and 2 of those lines of symmetry correctly drawn.

Scoring guide:

2 points – Correctly draws a figure and at least 2 lines of symmetry.

1 point – Correctly draws a figure and 1 line of symmetry.

0 points – Other.

Note: if more than two lines of symmetry are drawn, all lines must be correct in order to receive full credit.

### A1B4

Write the next number in the pattern:

3, 6, 12, 24, 48, \_\_\_\_\_

Describe this pattern:

Exemplary response: 96; explanation – each number is twice the previous number; numbers double; etc.

Scoring guide:

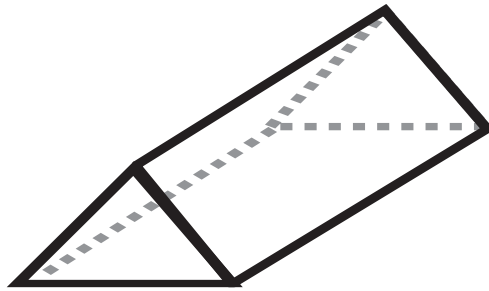
2 points – Correctly extends the pattern **and** an acceptable explanation.

1 point – Correctly extends the pattern **or** an acceptable explanation.

0 points – Other.

**G4A4**

What are the shapes of the faces on this figure?



Shapes: \_\_\_\_\_  
\_\_\_\_\_

Exemplary response: rectangle, triangle

Scoring guide:

- 2 points – Correctly identifies shapes
- 1 point – Correctly identifies one of the shapes
- 0 points – Other

**A1B4**

Manford put some coins in a coin exchange box that was not working properly. Whenever he put a nickel in the box, 11 cents came out. When he put in a penny, 3 cents came out of the box. When he put in a quarter, 51 cents came out.

Complete this In/Out chart that shows what happens when Manford puts the following amounts into the coin exchange box: 10¢, 50¢, and \$1.00.

In	Out
1¢	3¢
5¢	11¢
<b>10¢</b>	<b>21¢</b>
25¢	51¢
<b>50¢</b>	<b>\$1.01</b>
<b>\$1.00</b>	<b>\$2.01</b>

Exemplary response: Correct completion of the chart (see above) and double the in money and add one cent to get the out money or any other acceptable explanation.

Scoring guide:

- 2 points – Correctly completes chart **and** an acceptable description of input/output rule (input number times 2 plus 1 = output number or double the input number and add 1, etc.)
- 1 point – Correctly completes chart **or** an acceptable description of input/output rule (input number times 2 plus 1 = output number or double the input number and add 1, etc.)
- 0 points – Other

### A3A4

The fourth grade class is sponsoring the Ring Toss at the school carnival. Each colored ring that lands on the pole scores the points listed below. With each ticket you get **two of each colored rings** to toss.

Red	Blue	Green	Gold
10 points	15 points	20 points	double your points

Bob's goal is to score 30 points and win a prize. Which rings would he need to land on the pole to score 30 points?

What rings will Bob need to score 30 points.

Rings Bob needs: \_\_\_\_\_

Write a number sentence to show how you got your answer.

Number sentence: \_\_\_\_\_

Exemplary response: Bob could use the following rings: (3 red rings); (2 blue rings); (1 blue ring, 1 gold ring); (1 green ring, 1 red ring); (1 red ring, 1 gold ring, 1 red ring)  
The number sentence should reflect the rings Bob is using:  $10 + 10 + 10 = 30$ ;  
 $15 + 15 = 30$ ;  $15 \times 2 = 30$ ;  $20 + 10 = 30$ ;  $(10 \times 2) + 10 = 30$

Scoring guide:

2 points – Correct description of rings **and** number sentence that reflects the number of rings used (Example: 3 red rings and  $10 + 10 + 10 = 30$ )

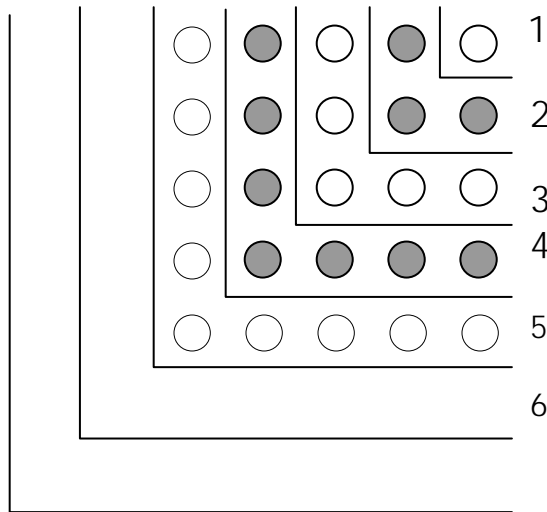
1 point – Correct description of rings **or** number sentence that reflects the number of rings used (Example: 3 red rings and  $10 + 10 + 10 = 30$ )

0 points – Other

**A1B4**

Jason is making an arrangement with odd numbers of circles. He begins with one white circle in the Step 1, adds three gray circles in Step 2, adds five white circles in Step 3, and adds seven gray circles in Step 4. He uses a table to keep track of the number of steps and the total number of circles in his arrangement after he adds each step.

Draw the circles in step 5 Jason’s arrangement:



In the box below, tell how you find the **total number of circles** in step 7 of Jason’s arrangement.

Exemplary response: Examples include: In Jason’s arrangement, the total number of circles equals the Step Number times itself (step number squared) which is 49 for step 7; you add  $1 + 3 + 5 + 7 + 9 + 11 + 13$  to get a total of 49; etc.

