

2014_Grade_6_Mathematics_Set_A

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2014 Problem Set A

[1] Calculate the following.

(1) $46 + 57$

(2) 903×6

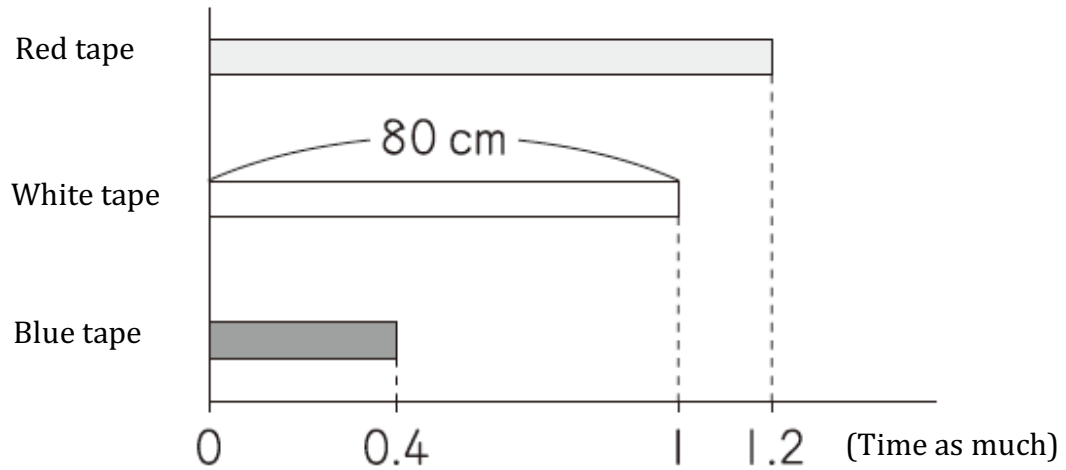
(3) $9 - 0.8$

(4) $2 \div 5$ (Divide completely and write the quotient as a decimal number.)

(5) $100 - 20 \times 4$

(6) $\frac{1}{3} + \frac{2}{5}$

- [2] As shown in the figure below, the lengths of a red tape and a blue tape based on the length of a white tape are represented.



- (1) Select the expression that will calculate the length of the red tape from **1** through **4** below and write the number.

- 1** $80 + 0.2$
- 2** $80 - 0.2$
- 3** 80×1.2
- 4** $80 \div 1.2$

- (2) Select the expression that will calculate the length of the blue tape from **1** through **4** below and write the number.

- 1** $80 + 0.6$
- 2** $80 - 0.6$
- 3** 80×0.4
- 4** $80 \div 0.4$

- [3] Which of the following fractions is greater than $\frac{1}{2}$? Select from **1** through **4** below and write the number.

1 $\frac{3}{5}$

2 $\frac{3}{6}$

3 $\frac{3}{8}$

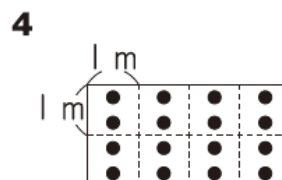
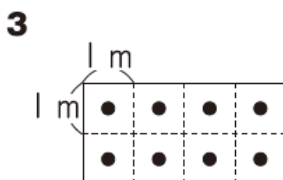
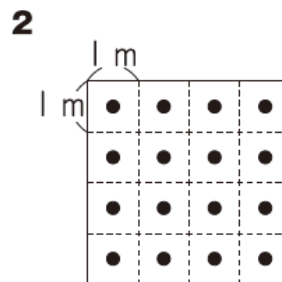
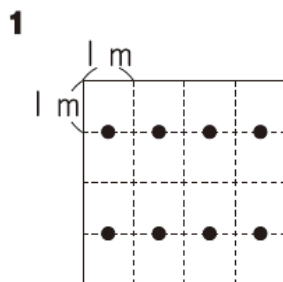
4 $\frac{3}{10}$

- [4] We are going to find out the number of people per 1 m^2 in Room A.

The area of Room A is 8 m^2 , and there are 16 people in the room.

- (1) Which of the figures represents Room A? Select from **1** through **4** below and write the number.

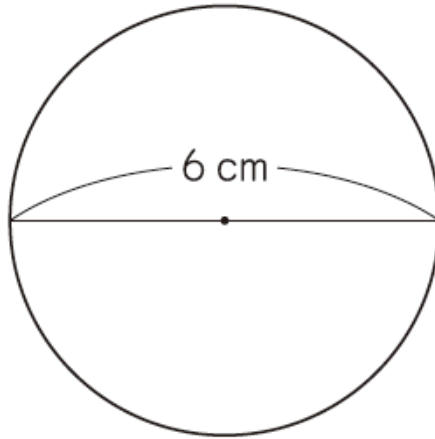
Note that each • represents one person.



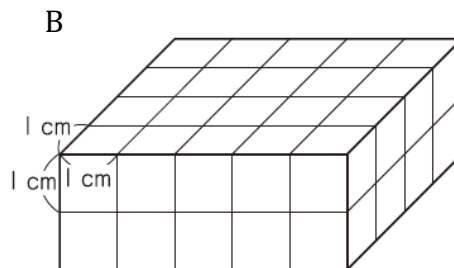
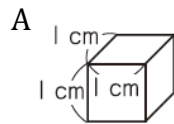
- (2) Write the expression to calculate the number of people per 1 m^2 in Room A. You do not have to write the answer.

[5] Answer the following questions.

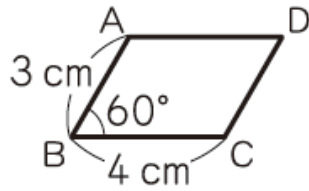
- (1) Write the expression to calculate the circumference of the circle shown below and the answer. Use 3.14 as the value of π .



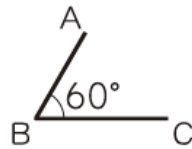
- (2) As shown in the figure below, we used Cube A to make Rectangular Prism B. How many cm^3 is the volume of B? Write your answer.



[6] We are going to draw Parallelogram ABCD shown below.

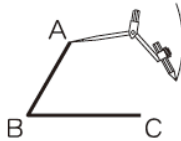
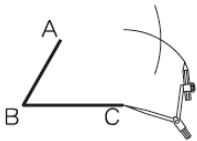
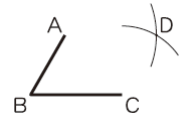
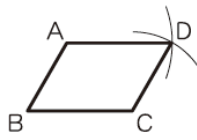


First, we drew side AB and side BC.



Next, we are going to complete the parallelogram using the method described below.

Method of drawing using a compass

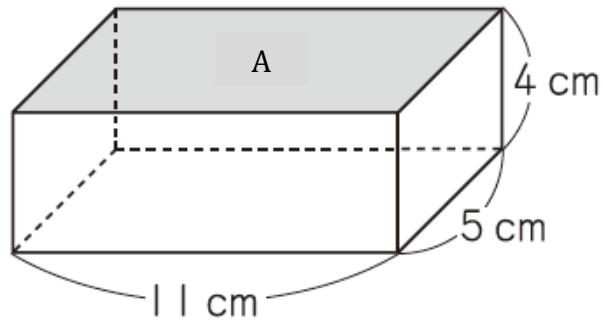
<p>(1) Draw an arc centered at Point A and the radius of 4 cm (the length of side BC).</p> 	<p>(2) Draw an arc centered at Point C and the radius of 3 cm (the length of side AB).</p> 
<p>(3) Let the point of intersection be Point D.</p> 	<p>(4) Connect Point A and Point D and also Point C and Point D.</p> 

What properties of parallelograms is **the method of drawing using a compass** using? Select one from **1** through **4** below and write the number.

In a parallelogram

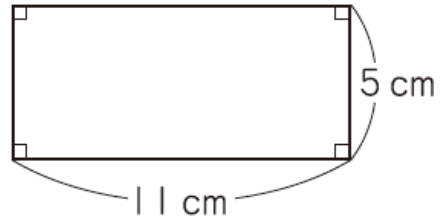
- 1** opposite sides are parallel.
- 2** opposite sides are equal in length.
- 3** opposite angles are equal in measure.
- 4** the diagonals intersect at their midpoints.

[7] There is a rectangular prism like the one shown below.

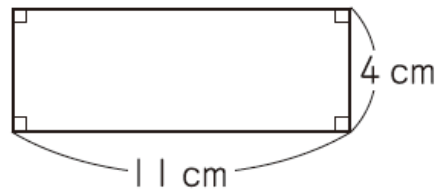


Select the quadrilateral that will be Face A in this rectangular prism from **1** through **4** below and write the number.

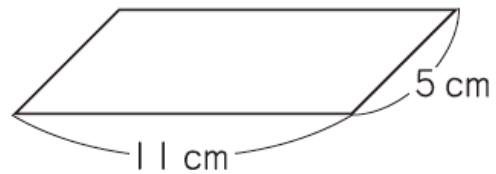
1 Rectangle



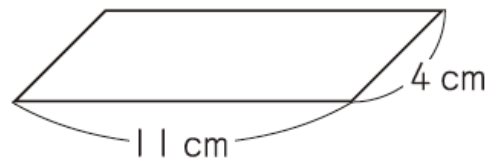
2 Rectangle



3 Parallelogram



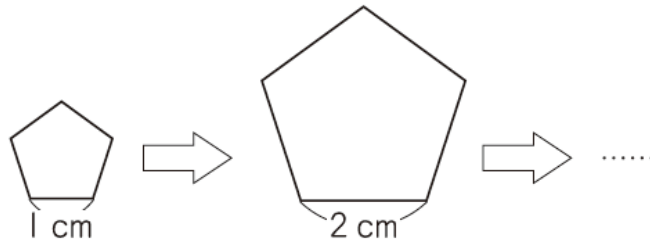
4 Parallelogram



[8] Select a problem whose answer can be calculated by $100 - 20 \times 4$ from **1** through **4** below and write the number.

- 1** We bought one 100-yen pack of gum and 4 pieces of 20-yen candies. How much is the total cost?
- 2** We went shopping with one 100-yen coin. We bought 4 pieces of 20-yen candies. How much is the change?
- 3** We bought 4 each of 100-yen pen and 20-yen pencil. How much is the total cost?
- 4** 100-yen pens are being sold with 20-yen discount. If we buy 4 of those pens, how much is the total cost?

[9] We investigated the perimeter of a regular pentagon when the length of its side is changed 1 cm, 2 cm, 3 cm, ... and summarized the results in the table below.



Length of a side (\square cm)	1	2	3	4	
Perimeter (\triangle cm)	5	10	15	20	

If we let the length of 1 side be \square cm and the perimeter be \triangle cm, which equations represent the relationship between \square and \triangle correctly? Select one from **1** through **4** below and write the number.

- 1** $\triangle + 5 = \square$
- 2** $\square + 5 = \triangle$
- 3** $\triangle \times 5 = \square$
- 4** $\square \times 5 = \triangle$