

※ You can receive 1.5 points each for problems number 1 to 30.

In problems 1-2, solve each question.

1. $16 \times 4 + 17 - 84 \div 7$

2. $(15 - 8) \times (13 - (16 + 8) \div 6)$

In problems 3-7, write the decimal part after solving each question. (For example, if the answer is 18.2 or 18.20, then write the final answer as 2. If the answer is 2.54 or 2.054, then write the final answer as 54.)

3.
$$\begin{array}{r} 5.9 \\ + 3.47 \\ \hline \end{array}$$

4. $3.77 + 17.4$

5.
$$\begin{array}{r} 7.6 \\ - 3.87 \\ \hline \end{array}$$

6. $22.7 - 2.53$

7.
$$\begin{array}{r} 4.67 \\ \times 1.4 \\ \hline \end{array}$$

In problems 8-10, write the greatest common factor for each set of numbers.

8.

21, 35

GCF : _____

9.

42, 98

GCF : _____

10.

54, 96, 126

GCF : _____

In problems 11-13, write the least common multiple for each set of numbers.

11.

35, 49

LCM : _____

12.

36, 90

LCM : _____

13.

15, 25, 45

LCM : _____

In problems 14-16, reduce each fraction into its simplest form. Then add both digits of the numerator and the denominator. (For example, if the answer is $\frac{2}{5}$, then write the final answer as $2+5=7$.)

14. $\frac{54}{63}$

15. $\frac{56}{70}$

16. $\frac{78}{117}$

In problems 17-25, solve the calculation into its simplest form as a proper fraction or a mixed number. Write the numerator of the fraction as your answer. (For example, if the answer is $3\frac{10}{6}$, make $4\frac{2}{3}$ and write the final answer as 2.)

17. $5\frac{3}{7} + \left(3 - 1\frac{4}{7}\right)$

18. $9 - 5\frac{7}{15} + \frac{14}{15}$

19. $2\frac{5}{6} + 3\frac{7}{12}$

20. $2\frac{7}{12} + 4\frac{9}{16}$

23. $3\frac{1}{21} \div 4\frac{4}{11}$

21. $6\frac{7}{15} - 3\frac{7}{10}$

24. $\frac{7}{9} \times \frac{8}{15} \div 1.4$

22. $2\frac{5}{8} \times 1\frac{2}{9}$

25. $4\frac{3}{8} \div 2.8 \div \frac{9}{16}$

In problem 26, calculate the quotient up to the hundredths place. Then, write only the decimal part after adding both the quotient and the remainder. (For example, if the quotient is 2.56 and the remainder is 0.004, make $2.56 + 0.004 = 2.564$, and write the final answer as 564.)

26.

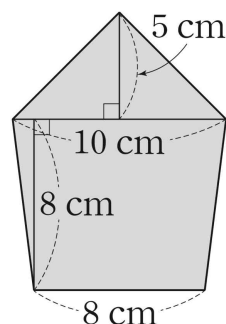
$$6.3 \overline{) 47.2}$$

In 27-28, solve each equation.

27. $(x \div 2.5) \times 3\frac{3}{4} = 9$

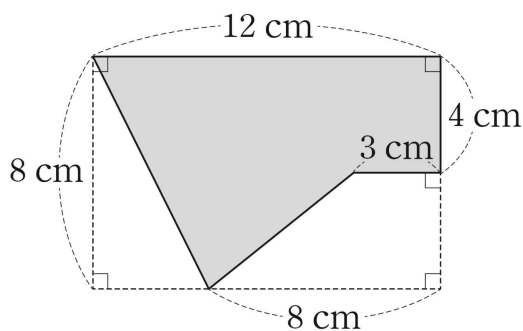
28. $\left(x - \frac{1}{4}\right) \div 6 = 2\frac{5}{8}$

29. Find the area of the figure.



cm²

30. Find the area of the shaded section.



cm²

※ You can receive 2.0 points each for problems number 31 to 40.

- 31.** Alice, Betty, and Chris have some candies. They have 33 candies in total. After Alice gave Betty 3 candies, the number of candies that each child had became the same. How many candies did Alice first have?

_____ candies

- 32.** Jamie and William had the same number of toy cars. Jamie gave 4 toy cars to William, and now William has twice as many as Jamie. How many toy cars do they have in total?

_____ toy cars

- 33.** Sam built a tower using three blocks. The blocks are $2\frac{2}{9}$ inches, $1\frac{8}{9}$ inches, and $3\frac{2}{9}$ inches tall. How tall is the tower that he built?

If the answer is $A\frac{C}{B}$ inches, find the value of $A + B + C$. (Note that $\frac{C}{B}$ is an irreducible fraction and $C < B$.)

- 34.** Anna has a rectangular piece of paper 360 cm wide and 225 cm long. She is going to cut the paper into equal size squares. How many pieces of square paper will be made if she cuts the paper into the largest possible squares without any leftover paper?

_____ pieces of square paper

- 35.** There is a plate of meat. Using a scale, the plate with meat weighs 2.132 kg, and the plate by itself weighs 0.745 kg. How much does the meat weigh? Write down only the decimal part of the answer. (For example, if the answer is 1.234 kg write down as 234.)

- 36.** There is $3\frac{3}{4}$ L of water in a jug. Sophia drank $1\frac{1}{3}$ L of the water and spilled $\frac{5}{6}$ L. How much water is left in the jug? Write down the sum of the denominator and numerator of the mixed number result. (For example, if the answer is $1\frac{2}{3}$, write down as $3 + 2 = 5$.)

- 37.** Paul collects iron ore from a mine. He collects 8.25 kg of iron ore every day. What is the total weight of the iron ore he will collect in 12 days?

_____ kg

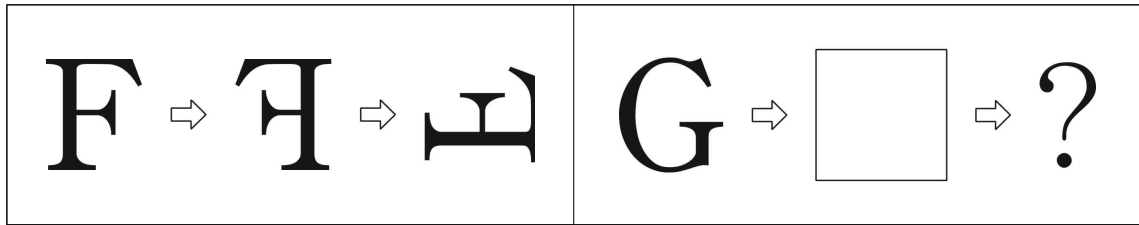
- 38.** There is a triangular piece of paper with an area of 722 cm^2 . The base of the triangle is 19 cm. What is the height of this triangular piece of paper?

_____ cm

- 39.** Alex walked $3\frac{7}{9}$ km yesterday. If he walked $\frac{3}{4}$ of yesterday's distance today, what distance did he walk today? If the answer is $A\frac{C}{B}$ km, write the sum $A + B + C$. (Note that $\frac{C}{B}$ is an irreducible fraction and $C < B$.)
- _____

- 40.** Jenny has a pipe that is 3.2 meters long. She tries to cut the pipe into as many small pipes as possible, each measuring 0.275 m. What is the length of the pipe leftover after cutting? Write down only the decimal part of the answer. (For example, if the answer is 1.23 m write down as 23.)
- _____

41. Look at the related figures and find the one that belongs in the “?”.
[2.3 points]



①



②



③



④



Answer : _____

42. Clara, Edward, Helen, and Richard competed in a running race. Based on the following statements, find the person who won the race. [2.3 points]

- (1) Clara crossed the finish line before Edward, but there was someone who finished earlier than she did.
(2) Two people crossed the finish line before Helen.

① Clara

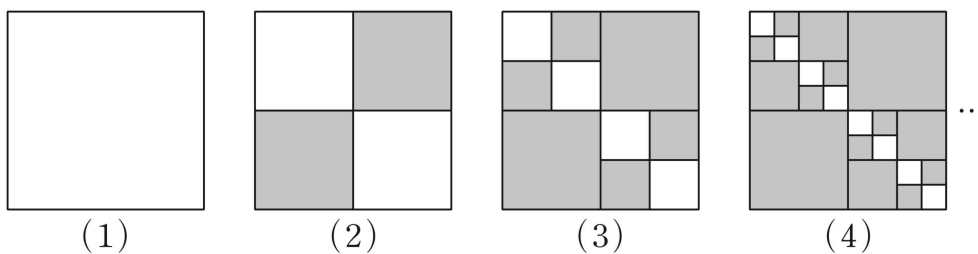
② Edward

③ Helen

④ Richard

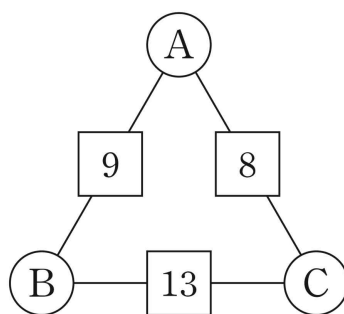
Answer : _____

43. The following figures are colored in a certain pattern. How many squares should be colored in the next figure, (5)? [3.3 points]



Answer : _____ squares

44. The number in each $\square$ is the sum of the two numbers on either end of the line. Find the value of $A + B + C$. [3.3 points]



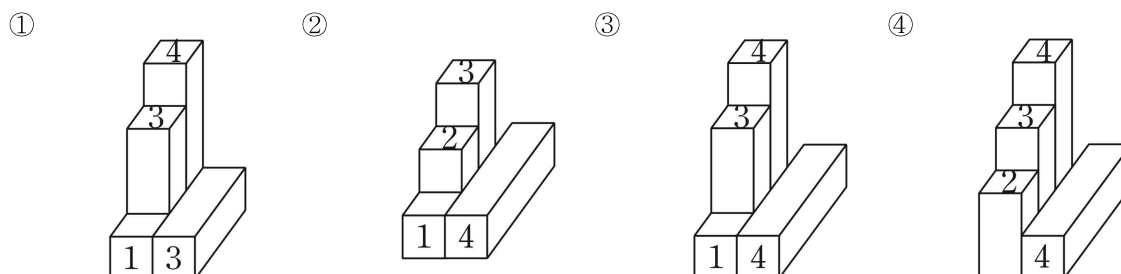
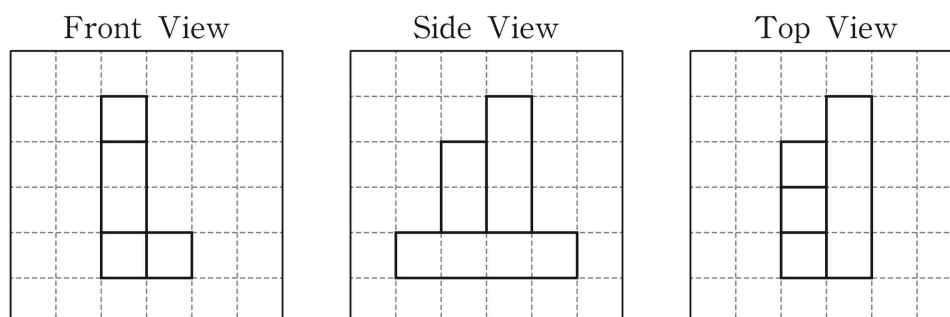
Answer : _____

45. You are going to complete the following expression. When you are doing this, each symbol $+$, $\times$ and $\div$ can be used only once. Among all the possible combinations, what is the least value that you can get? [3.3 points]

$$2 \square 4 \square 8 \square 6$$

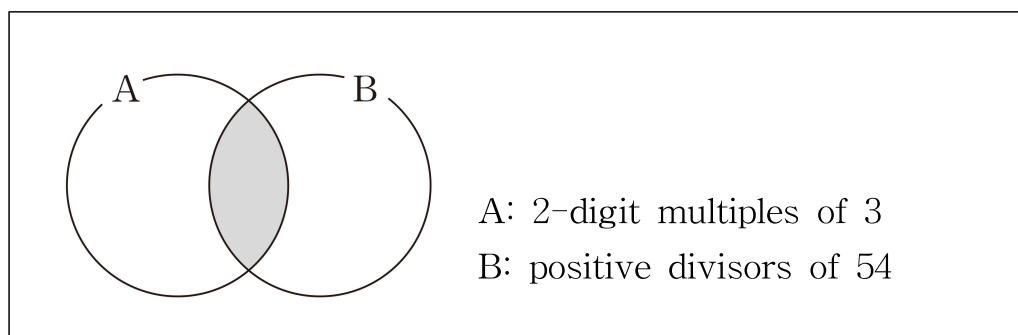
Answer : _____

46. The front, side, and top views of a set of blocks are shown in the diagrams below. Find the block that matches the diagrams. [3.3 points]



Answer : _____

47. How many natural numbers should be placed in the shaded area in the Venn diagram shown below? [4.3 points]



Answer : _____ numbers

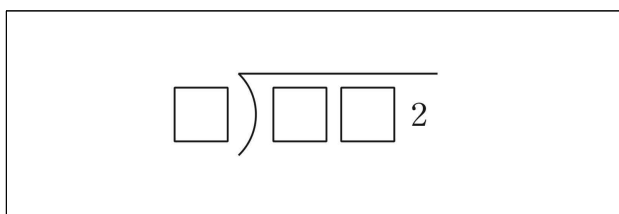
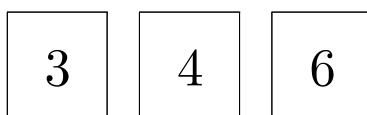
48. How many 3-digit even numbers can you make using the number cards shown below? [4.3 points]



Answer : _____ numbers

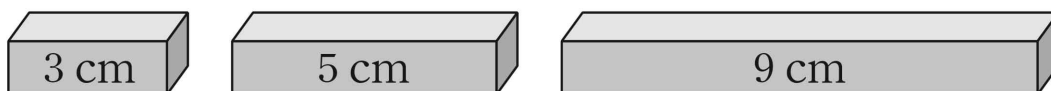
49. You are going to write division problems using all of the following three numbers. How many division problems can you make that have a remainder of 0 after the calculation?

[4.3 points]



Answer : _____

50. Three sticks measure 3cm, 5cm, and 9cm. What is the smallest natural number length that cannot be measured with these three sticks? [4.3 points]



Answer : _____ cm