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

In 1-8, write the numerator after calculating each question as the simplest form of a proper fraction or a mixed number. (For example, if the answer is $3\frac{10}{6}$, make $4\frac{2}{3}$ and write 2.)

1. $5\frac{7}{8}+2\frac{5}{18}$

2. $7\frac{4}{9}-3\frac{7}{12}$

3. $3\frac{3}{5}\times 2\frac{4}{9}$

4. $0.36\times 1\frac{5}{9}$

5. $1\frac{3}{8}\div 1\frac{1}{4}$

6. $6\frac{2}{3}\div 1\frac{3}{7}\times 2\frac{1}{2}$

7. $4\frac{1}{5} \div 1.75 - 1\frac{2}{3}$

8. $6 - \left(5 + \left(\frac{3}{4} + \frac{1}{6}\right) \div 11\right)$

In 9-12, write the decimal part after solving each question. (For example, if the answer is 18.2 or 18.20, then write as 2. If the answer is 2.54 or 2.054, then write as 54.)

9.
$$\begin{array}{r} 4.78 \\ \times \quad 6 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 5.3 \\ \times \quad 7.4 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 24.7 \\ \times \quad 3.7 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 6.35 \\ \times \quad 0.84 \\ \hline \end{array}$$

In 13-17, after calculating the quotient to the hundredths place, write the decimal part of the sum of 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 564.)

13.

$7\overline{)\ 3\ 2.3}$

14.

$4.5\overline{)\ 5.2\ 8}$

15.

$3.6\overline{)\ 2\ 4.5\ 3}$

16.

$6.3\overline{)\ 2\ 7.6\ 3}$

17.

$57.3\overline{)\ 5\ 0.3\ 4}$

In 18-22, solve each equation. If it is a positive number, put 1 to replace the positive sign. However, if it is a negative number, then put 2 to replace the negative sign for the answer. (For example, if the answer is 45, then write as 145, but if the answer is -3, then write as 23.)

18. $(16\times x)\div 6=48$

19. $(x+3.7)-4\frac{1}{5}=2\frac{1}{2}$

20. $\left(x\times\frac{7}{8}\right)+0.75=6$

21. $\left(x\times2\frac{4}{5}\right)\div1.8=1\frac{5}{9}$

22. $\frac{5}{8}x-2\frac{3}{4}=\frac{1}{4}x-5$

In 23-25, find the value of x. If it is a positive number, put 1 to replace the positive sign. However, if it is a negative number, then put 2 to replace the negative sign for the answer. (For example, if the answer is 45, then write as 145, but if the answer is -3, then write as 23.)

23. $x\ :\ 5\frac{1}{3}=1\frac{1}{2}\ :\ 4$

24. $3.5\ :\ x=1\frac{3}{4}\ :\ 1\frac{1}{2}$

25. $\frac{5}{12} : 1\frac{2}{3} = 1.75 : x$

In 26, express the ratio as the simplest natural number form and add all three numbers. (For example, if the ratio is $7:1:3$, then write as $7+1+3=11$.)

26. $2\frac{1}{2} : 1.75 : 4$

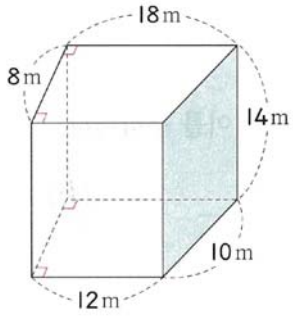
In 27-28, find the answer after solving the question. If it is a positive number, put 1 to replace the positive sign. However, if it is a negative number, then put 2 to replace the negative sign for the answer. (For example, if the answer is 45, then write as 145, but if the answer is -3, then write as 23.)

27. $-\frac{3}{5}+(-1-(-2+(9-6.6)))$

28. $4\frac{3}{8} \div (-3.2) \times \left(-4\frac{4}{7}\right) \div (-0.625)$

29. Find the value of a if the solutions to $\frac{1}{2}x-1=\frac{3}{2}-2x$ and $\frac{a-x}{2}=\frac{x+5}{3}$ are equal.

30. Find the surface area.



[ ] m^2

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

31. Suzy read $\frac{5}{12}$ of her book yesterday and $\frac{7}{16}$ today. She will read $\frac{1}{9}$ of the book tomorrow. What fraction of the book did Suzy read yesterday and today? (Write down the sum of denominator and numerator of mixed number. For example, if the answer is $4\frac{2}{3}$, write down as $3+2=5$.)

_____

32. The 3 members of Jenny's family drink an equal amount of milk each day. If $3\frac{3}{4}$L of milk are consumed each day, how much milk does each person drink? (Write down the sum of denominator and numerator of mixed number. For example, if the answer is $4\frac{2}{3}$, write down as $3+2=5$.)

_____

33. There are 45L of water, and each person can drink 7.6L of the water. If the water is drank by as many people as possible, how much water will be left?

_____ L

34. A dozen pencils have a weight of 71.76g. What is the weight of one pencil? (Write the decimal part. For example, if the answer is 3.75 write down as 75.)

_____

35. A ribbon is cut into 8 pieces and each piece is 2.8cm. What was the length of the ribbon before it was cut? (Write the decimal part. For example, if the answer is 3.75 write down as 75.)

_____

36. The ratio of the length and width of the base of a rectangular prism is $5:2$ and the ratio of the width and the height of the prism is $4:7$. Express the length, width, and height of the prism as a continued proportion in the simplest natural form and add all three numbers. (For example, if the ratio is $7:1:3$, then write as $7+1+3=11$.)

_____

37. 660 people entered a theme park. There were students from an elementary school, a middle school, and a high school in a ratio of $5:4:2$, how many middle school students were there?

_____ students

38. A $1\mathrm{m}$ log has a weight of $\frac{4}{7}\mathrm{kg}$. What is the weight of two logs that are $0.75\mathrm{m}$ and $\frac{2}{5}\mathrm{m}$? (Write down the sum of denominator and numerator of mixed number. For example, if the answer is $4\frac{2}{3}$, write down as $3+2=5$.)

_____

39. We planted lilies and sunflowers in a row by the sidewalk. From the doorstep, lilies were planted every $35\mathrm{cm}$ and sunflowers every $40\mathrm{cm}$. How near to the doorstep is the first place where a lily and a sunflower are both planted?

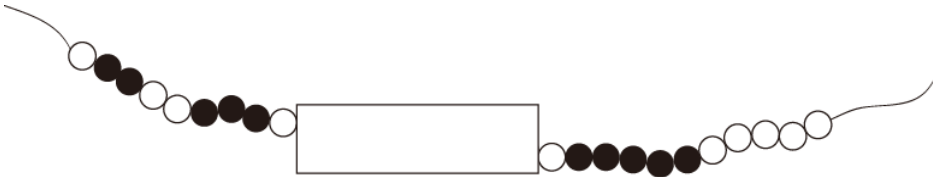
_____ cm

40. In $200\mathrm{g}$ of 8% salt water, how many grams of water should you evaporate to make the concentration 20%?

_____ g

41. Beads are threaded in the pattern shown below. Write the number of beads in □.

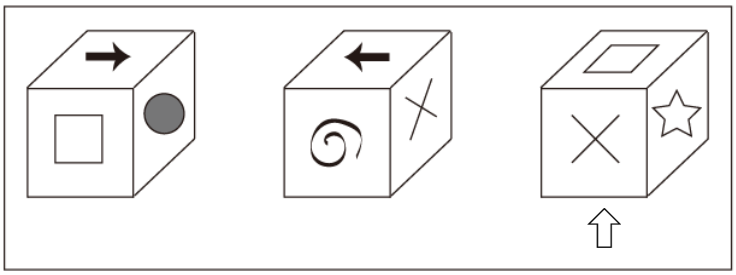
[2.3 points]



Answer : _____ beads

42. The following shows the various sides of cube. Find the figure that will be at the bottom of the cube when it is placed as indicated in the third position.

[2.3 points]



① 

② 

③ 

④ 

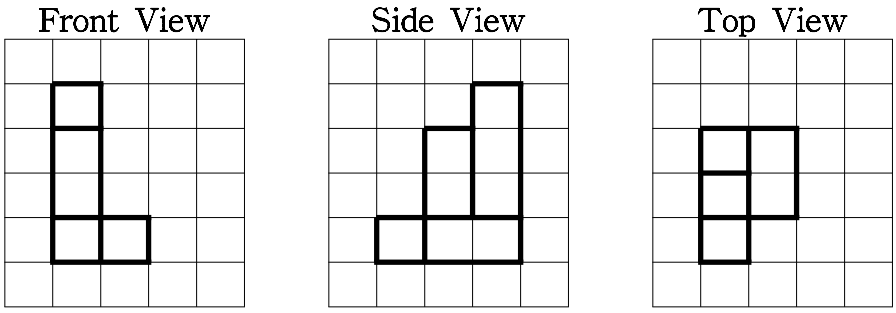
Answer : _____

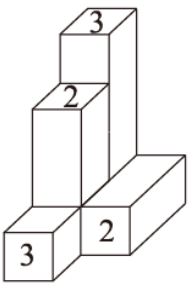
43. Using the number cards below. Fill in the numbers of the underline boxes $\underline{\square\square}$ $\times\square\boxed{5}=1{,}440$. [3.3 points]

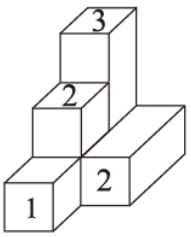
2	3	4	5

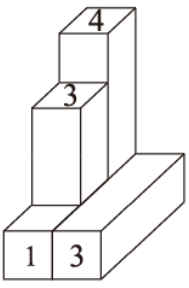
Answer : _____

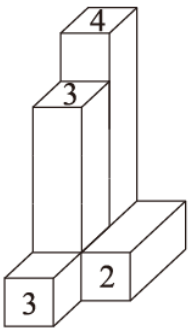
44. The front, side, and top views of a set of blocks are given. Find the correct set of blocks. [3.3 points]



① 

② 

③ 

④ 

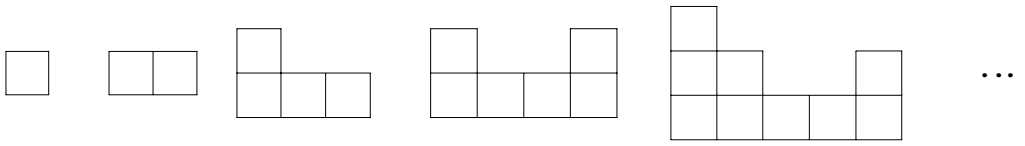
Answer : _____

45. In Olivia's class, students are trying to select two students for the math competition from 7 students. How many ways can they select two students?

[3.3 points]

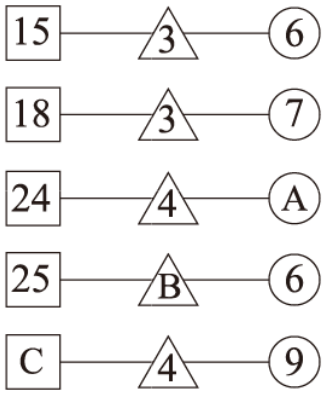
Answer : _____ ways

46. The picture below follows an increasing pattern and the figure numbers indicate the order. Write the number of squares(☐) in 10. [3.3 points]



Answer : _____ squares

47. If the set of numbers fits the pattern, find the correct number ‘A’ , ‘B’ , and ‘C’. What is the sum of ‘A’ , ‘B’ , and ‘C’? [4.3 points]



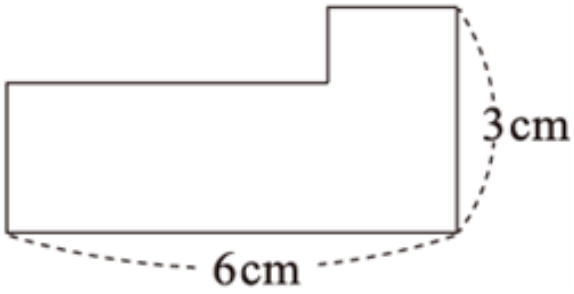
Answer : _____

48. Sam writes the number from 1 to 100. How many times the numeral ‘1’ is used? [4.3 points]

Answer : _____

49. This is the map of a building. What is the actual perimeter of the building?

[4.3 points]

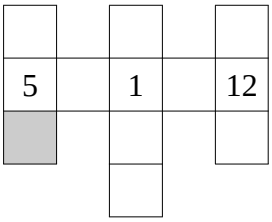


Answer : _____ m

50. Fill the empty boxes with the numbers that satisfy the following statements.

1. Use numbers from 1 to 12 only once.
2. The sum of the numbers in a row and three columns are the same.

What is the sum of the correct numbers in shaded ▨? [4.3 points]



Answer : _____