※ YOU CAN RECEIVE 1.5 POINTS EACH FOR PROBLEMS NUMBER 1 TO 30.

In problems 1-6, solve each question. Then add the quotient and the remainder as your answer. (For example, if the quotient is 5 and the remainder is 0, then the final answer is $5+0=5$. If the quotient is 12 and the remainder is 8, then the final answer is $12+8=20$.)

1.

$7\overline{)84}$

2.

$8\overline{)98}$

3.

$32\overline{)236}$

4.

$46\overline{)397}$

5.

$63\overline{)373}$

6.

$72\overline{)3012}$

In problems 7-13, calculate the answer.

7. $40 \div (5+3) \times 7$

8. $6 \times 8 - 9 + 12 \div 3$

9. $(23+5) \div 4 - 15 \div 5$

10. $41 - 4 \times 6 \div 8$

11. $(82-47) \div 5 + 3 \times 4$

12. $67 - 2 \times 9 + 42 \div 6 - 28$

13. $(74-26)\div((12-8)\times 6-16)$

In problems 14-16, solve each question. Then add all the numbers of different units. (For example, if the answer is $3(\text{km, kg, L})\ \ 54(\text{m, g, mL})$, then write the final answer as $3+54=57$.)

14.

$$\begin{array}{rr} & 6\text{ km}\ \ 254\text{ m} \\ - & 3\text{ km}\ \ 410\text{ m} \\ \hline \end{array}$$

15.

$$\begin{array}{rr} & 4\text{ kg}\ \ 830\text{ g} \\ + & 2\text{ kg}\ \ 440\text{ g} \\ \hline \end{array}$$

16.

$$\begin{array}{rr} & 14\text{ L}\ \ 150\text{ mL} \\ - & 4\text{ L}\ \ 480\text{ mL} \\ \hline \end{array}$$

17. Express the following time in hours (A), minutes (B), and seconds (C), then find the sum of A, B, and C.

9506 seconds

In problems 18-19, solve each question. Then add all the numbers of different units. (For example, if the answer is $7\text{hr}\ 34\text{min}\ 23\text{sec}$, then write the final answer as $7+34+23=64$.)

18.

$$\begin{array}{rr} & 2\text{ hr}\ \ 51\text{ min}\ \ 39\text{ sec} \\ + & 7\text{ hr}\ \ 38\text{ min}\ \ 47\text{ sec} \\ \hline \end{array}$$

19.

$$\begin{array}{rrrr} & 5\,\text{hr} & 22\,\text{min} & 45\,\text{sec} \\ - & 3\,\text{hr} & 45\,\text{min} & 50\,\text{sec} \\ \hline \end{array}$$

In problems 20-21, write each fraction into its simplest form. Then add the numerator and the denominator. (For example, if the answer is $\frac{2}{3}$, then write the final answer as $2+3=5$.)

20. $\frac{32}{72}$

21. $\frac{60}{144}$

In problems 22-27, solve each equation as a proper fraction or a mixed number in its simplest form. Then write the numerator. (For example, if the answer is $3\frac{10}{6}$, make $4\frac{2}{3}$ and write the final answer as 2.)

22. $5\frac{4}{11} - 2\frac{7}{11}$

23. $3\frac{5}{9} + \left(2\frac{2}{9} - 1\frac{4}{9}\right)$

24. $3\frac{5}{14} + 1\frac{9}{10}$

25. $4\frac{1}{6} - 2\frac{7}{18}$

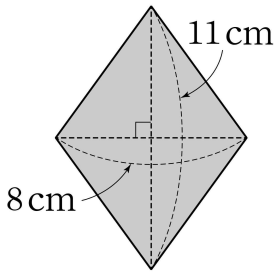
26. $2\frac{1}{4} \times 4\frac{1}{6}$

27. $\frac{12}{13} \div 6.8 \times 3\frac{2}{5}$

28. Solve the question. Then write the decimal part as your answer. (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.)

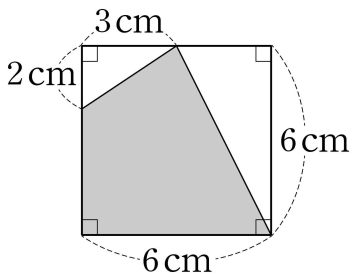
$13.2 - 5.32$

29. Find the area of the rhombus.



$\square$ cm^2

30. Find the area of the shaded section.



$\square$ cm^2

※ YOU CAN RECEIVE 2.0 POINTS EACH FOR PROBLEMS NUMBER 31 TO 40.

31. Ron needs to print a document. The document file has 73 pages. He thought it would take too much paper, so he will print on both sides of the paper. How many sheets of paper should he prepare?

_____ sheets

32. In the calendar, the length of months are not constant. So, someone proposed a new calendar system that divides 365 days equally into 13 months and the remaining day is celebrated as a world-wide holiday. How many days does each month have in this calendar?

_____ days

33. A triathlon is a multi-sport race consisting of swimming, cycling, and running. An athlete recorded 45 minutes swimming, 1 hour 35 minutes cycling, and 2 hours 27 minutes running. How much time did he take to complete the whole race? Write your answer in hr and min and then add the two numbers. (For example, if the answer is 1hr 23min, then write 1 + 23 = 24.)

_____

34. 4 pens cost \$5 and 3 notebooks cost \$24. Ian bought 8 pens and 2 notebooks. Find how much change Ian should receive if he paid with a \$50 bill.

\$_____

35. A frog jumping contest was held. Hopping Harry jumped 18 cm every 5 seconds without a break. Jumping Joe jumped 20 cm every 6 seconds without a break. What is the difference in the distance they jumped at the end of one minute?

_____ cm

36. A quarter weighs about 6 g and a dime weighs about 2 g. What is the difference in weight between \$38.00 in quarters and \$38.00 in dimes?

_____ grams

37. A gadget is $9\frac{11}{12}$ inches long and is made from two linked pieces. One piece is $3\frac{5}{12}$ inches long. The length of the gadget is the sum of lengths of the two pieces. How many inches long is the other piece of the gadget? Calculate the answer as a mixed fraction in simplest form. Then write down the sum of the denominator and the numerator.

_____

38. At a party, Jack and his friends served different types of juice. At the end of the

party, $1\frac{3}{8}$ L of orange juice was left, $\frac{13}{8}$ L of apple juice was left, and $\frac{9}{8}$ L of mango juice was left. Which juice has the least amount left? For this juice, write down the sum of the denominator and numerator of the mixed fraction in simplest form. (For example, if the answer is $\frac{11}{4}$, make $2\frac{3}{4}$ and write down 3 + 4 = 7).

_____

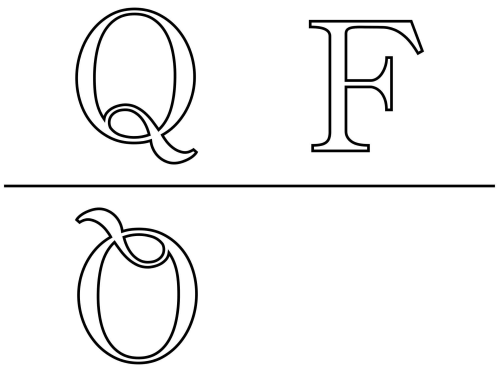
39. Gina is going to decorate a 24 cm by 18 cm rectangle using squares of colored paper. The squares should be the same size and should not overlap. How long is the side of the largest squares that she could use to fill the rectangle completely?

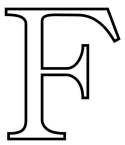
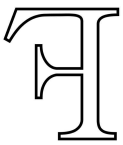
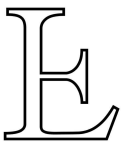
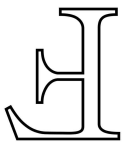
_____ cm

40. A rectangle has a base of $11\frac{1}{4}$ cm and a height of $7\frac{1}{5}$ cm. What is the perimeter of this rectangle in centimeters? Write down the sum of the denominator and the numerator of the mixed fraction in its simplest form. (For example, if the answer is $7\frac{8}{9}$, write down as 8 + 9 = 17.)

_____

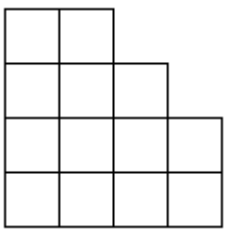
41. The shapes above and below the line follow a pattern. Based on the pattern, which shape belongs in the blank space? [2.3 points]



① 
② 
③ 
④ 

Answer : _____

42. In the following figure, how many large and small squares can you find in total? [2.3 points]

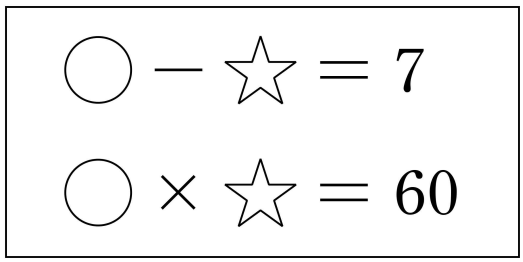


Answer : _____ squares

43. Ken gets into an elevator. He goes up 3 floors, down 5 floors, and then up 10 floors, which puts him at the top floor. Then he goes down 9 floors, up 6 floors, and down 12 floors, which puts him at the first floor. At which floor number did Ken get on the elevator? [3.3 points]

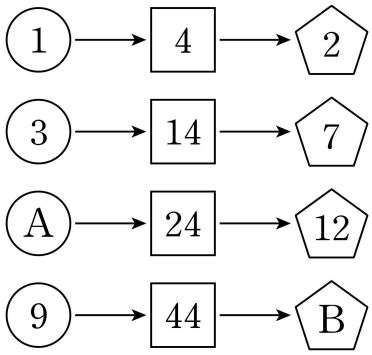
Answer : _____th floor

44. Two numbers ○ and ☆ have a difference of 7 and a product of 60.
What is the sum of ○ and ☆? [3.3 points]



Answer : _____

45. The three numbers in each row follow a certain rule. If you put the correct numbers in A and B, what is A+B? [3.3 points]



Answer : _____

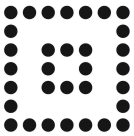
46. Amy, Bonnie, Clara, and Dorothy ran in a race. Referring to the following statements, find the person who won the race. [3.3 points]

(1) In the first lap, Amy took the lead.
(2) Two girls overtook Amy in the next lap.
(3) Amy overtook Bonnie.
(4) Clara overtook Bonnie.
(5) There were no other overtaking events.

① Amy ② Bonnie ③ Clara ④ Dorothy

Answer : _____

47. In the following figures, dots are arranged using a certain rule. How many dots should be arranged in the last figure? [4.3 points]

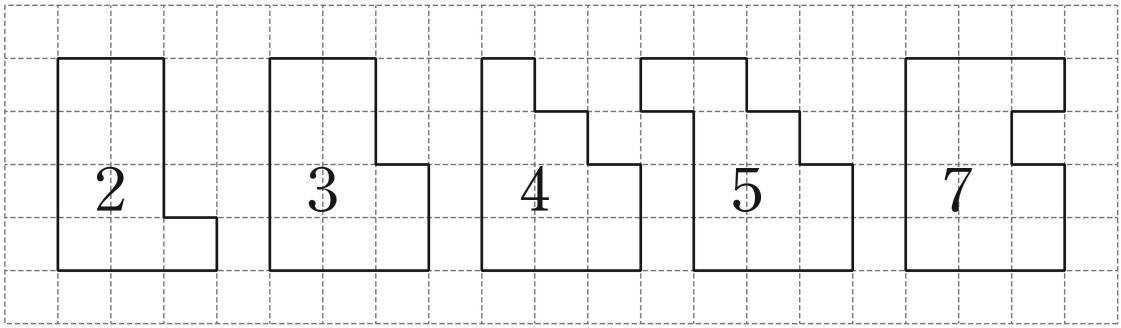
					
1	8	17	32	49	?

Answer : _____ dots

48. There are five number cards as below. Among the 3-digit numbers you can make using three different cards, how many even 3-digit numbers are possible? [4.3 points]

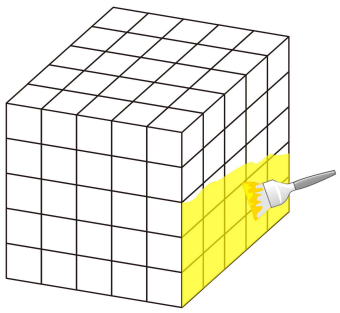
Answer : _____

49. Find the product of the numbers written on the figures which can be symmetrical when one square is removed. [4.3 points]



Answer : _____

50. The following big cube was made using 125 blocks. If you paint the whole surface of the big cube, the inner blocks will not be painted. Find the difference between the number of painted blocks and unpainted blocks. [4.3 points]



Answer : _____