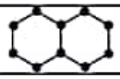
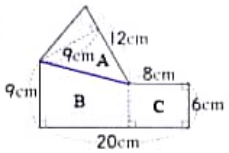
2012 Eye Level MATH Olympiad [Grade6]

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	43	11	12	21	$1\frac{5}{6}$	31	25	41	9
2	77	12	80	22	$10\frac{21}{50}$	32	Alex	42	2, 9, 6
3	8.35	13	140	23	$3\frac{15}{56}$	33	15.34	43	8
4	22.293	14	30	24	$4\frac{2}{3}$	34	1.52	44	10
5	1.864	15	$\frac{3}{4}$	25	9	35	12	45	4
6	0.017	16	$\frac{7}{9}$	26	$\frac{2}{21}$	36	6	46	5
7	0.13272	17	$\frac{4}{7}$	27	1	37	$1\frac{11}{18}$	47	
8	7.8R0.53	18	$1\frac{6}{7}$	28	$6\frac{11}{15}$	38	20	48	8
9	6	19	0	29	8	39	2, 4	49	21
10	7	20	$3\frac{2}{21}$	30	192	40	44	50	A, B, D

【Sol】

29. $9 \times \square \div 2 = 36$, $\square = 36 \times 2 \div 9 = 8$

30.



A: $12 \times 9 \div 2 = 54\ (cm^2)$

B: $(9+6) \times 12 \div 2 = 90\ (cm^2)$

C: $8 \times 6 = 48\ (cm^2)$

A+B+C: $54+90+48 = 192\ (cm^2)$

31. 15×2-5=25

32. Jenny: $(90+80)\times23\div2=170\times23\div2=1955(cm^2)$

Alex: $(90+70)\times27\div2=160\times27\div2=2160(cm^2)$

33. 7.64+7.7=15.34

34. 3.44-1.92=1.52

35.
$$\begin{array}{r|lll} 3 & 48 & 36 & 24 \\ 2 & 16 & 12 & 8 \\ 2 & 8 & 6 & 4 \\ \hline & 4 & 3 & 2 \end{array} \Rightarrow 3 \times 2 \times 2 = 12$$

36. $3\frac{9}{14}+2\frac{7}{10}=3\frac{45}{70}+2\frac{49}{70}=6\frac{24}{70}=6\frac{12}{35}$

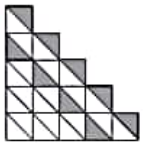
37. $7\frac{1}{6}-5\frac{5}{9}=7\frac{3}{18}-5\frac{10}{18}=1\frac{11}{18}$

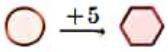
38. $8\frac{1}{3}\times\frac{4}{5}\times3=\frac{25}{3}\times\frac{4}{5}\times3=20$

39. 29÷12.5=2R4

40. Let x represent the number of women

$(x \times 2\frac{3}{4})+26=147$, $x \times \frac{11}{4} \times 121$, $x=44$

41.  ⇒ 4+5=9

42. 

2+5=7

4+5=9

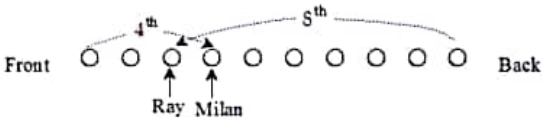
6+5=11

43. (Balance 1) 

(Balance 2) 

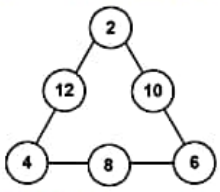
(Balance 3) 

44.



46. 28-(15+18-10)=5

48. Each side of triangle has a sum of 18



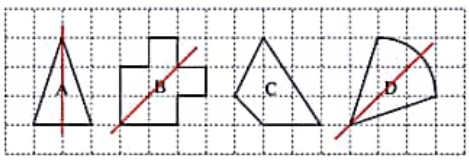
49. 200, 211, 222, ..., 299 (10)

300, 311, 322, ..., 399 (10)

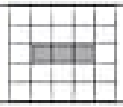
400 (1)

⇒ 10+10+1=21

50.



2013 Eye Level MATH Olympiad [Grade 6]

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	81	11	5	21	$8\frac{7}{60}$	31	51	41	31, 62, 93
2	7	12	75	22	$2\frac{5}{12}$	32	6	42	36
3	29.07	13	96	23	$3\frac{31}{36}$	33	3.83	43	A=2, B=7, C=10
4	6.201	14	42	24	6	34	6	44	12
5	0.448	15	$\frac{5}{6}$	25	$1\frac{1}{8}\left(\frac{9}{8}\right)$	35	② : Sam ③ : James ⑤ : Heather	45	30
6	2.173	16	$\frac{2}{5}$	26	$\frac{7}{32}$	36	$\frac{37}{60}$	46	6
7	26.838	17	$\frac{3}{4}$	27	$3\frac{1}{2}$	37	$\frac{9}{10}$	47	
8	0.031	18	$1\frac{5}{7}$	28	$1\frac{1}{4}\left(\frac{5}{4}\right)$	38	$1\frac{1}{4}$	48	11
9	12	19	$\frac{8}{9}$	29	15	39	$0.25\left(\frac{1}{4}\right)$	49	300
10	2	20	$4\frac{17}{18}$	30	36	40	3.4	50	A=7, B=9, C=10, D=5

【Sol】

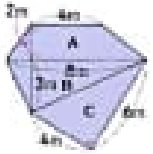
29. $(7 + \square) \times 10 \div 2 = 110$

$(7 + \square) \times 10 = 220$

$(7 + \square) = 22,$

$\square = 15$

30.



$A : (4+8) \times 2 \div 2 = 12(m^2)$

$B : 8 \times 3 \div 2 = 12(m^2)$

$C : 4 \times 6 \div 2 = 12(m^2)$

$A + B + C = 12 + 12 + 12 = 36(m^2)$

31. $(20 \div 5) \times 4 + (40 \div 8) \times 7$

$= 4 \times 4 + 5 \times 7 = 16 + 35 = 51$

32. $8 \times \square = 48.$

$\square = 48 \div 8 = 6$

33. $2.59 + 1.24 = 3.83$

34. $2\overline{)\ 18\ \ 12}$ ⇨ Greatest common factor

$3\overline{)\ 9\ \ 6}$ $2 \times 3 = 6$

$3\ \ 2$

The number of students is 6.

35. Sam : $16=2\times2\times2\times2$ → seat No. 2

James : $27=3\times3\times3$ → seat No. 3

Heather : $24=2\times2\times2\times3$ → seat No. 6

36. $\frac{4}{15} + \frac{7}{20} = \frac{37}{60}$

37. $5\frac{4}{5} - 4\frac{9}{10} = \frac{9}{10}$

38. $4\frac{3}{4} + 3\frac{4}{5} = 1\frac{1}{4}$

39. Standard amount: 300, comparing amount: 75

The value of the ratio $= \frac{75}{300} = \frac{1}{4} = 0.25$

40. width : length

$= 11.25 : 15 = \frac{45}{4} : \frac{60}{4} = 45 : 60 = 3 : 4$

41. ones place is 1 → 31

ones place is 2 → 62 → 31, 62, 93

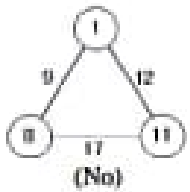
ones place is 3 → 93

42. using the pattern, there are 36 dots in 7

Number	1	2	3	4	5	6	7
Number of dots	6	11	16	21	26	31	36
		+5	+5	+5	+5	+5	+5

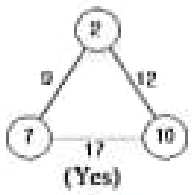
43.

If the value of A is 1.



(No)

If the value of A is 2,



(Yes)

Therefore, the value of A, B, and C is 2, 7, and 10.

44.

⇒ There are 4×3=12 different ways.

45.

2 cuts (It takes 6 minutes to make 1 cut.)

: 5 cuts

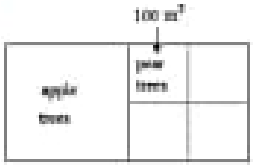
Therefore, it takes 30 minutes to make 5 cuts.

46. $7 + 7 = 78 \div 6 = 13$

$7 = 13 - 7 = 6$

48. There are 12 red marbles.
There are 15 yellow marbles.
There are 11 blue marbles

49.



⇒ 300m² of the orchard are does not have any trees.

50. (A+B+C)+D=31, (A+B+C)+C=36 ⇒ C=D+5

(B+C)+(B+C)=38, B+C=19
(A+C)+(B+C)=36, A+C=17 ⇒ B=A+2

A+(B+C+D)=31, (B+C+D)+D=29 ⇒ A=D+2

B=A+2 , A=D+2 ⇒ B=D+4

Since A+B+C+D = (D+2)+(D+4)+(D+5)+D
= D× 4+11=31,

then D=5, A=7, B=9, C=10.

2014 Eye Level MATH Olympiad [Grade 6]

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	12	11	72	21	19	31	17	41	10
2	2	12	96	22	55	32	8	42	40
3	35	13	42	23	7	33	12	43	4
4	15	14	15	24	28	34	3	44	933
5	53	15	12	25	30	35	6	45	③
6	5	16	11	26	83	36	31	46	④
7	988	17	7	27	12	37	26	47	6
8	3	18	6	28	9	38	7	48	10
9	14	19	11	29	12	39	369	49	30
10	4	20	9	30	68	40	45	50	18

[Sol]

28. $\left(x \times 1\frac{1}{6}\right) + 0.75 = 11.25$,

$\left(x \times 1\frac{1}{6}\right) + 0.75 - 0.75 = 11.25 - 0.75$,

$\left(x \times 1\frac{1}{6}\right) \div 1\frac{1}{6} = 10.5 \div 1\frac{1}{6}$,

$x = 9$

29. $8 \times 3 \div 2 = 24 \div 2 = 12$

30. $14 \times 10 - (6 \times 4 \div 2 + 8 \times 6 \div 2 + 8 \times 6 \div 2 + 6 \times 4 \div 2)$

$= 140 - (12 + 24 + 24 + 12) = 140 - 72 = 68$

31. $(3 + (40 \div 5) \times 3) - 10 = 17$

32. $(2\frac{1}{5} + 1\frac{1}{5}) - 1\frac{4}{5} = 3\frac{2}{5} - 1\frac{4}{5} = 1\frac{3}{5} \Rightarrow 8$

33. $153.9 - 62.78 = 91.12 \Rightarrow 12$

34.
$2 \) 8 \quad 24$
$2 \) 4 \quad 12$
$2 \) 2 \quad 6$
$1 \quad 3$

⇨ Maximum number of people

8

$21 \div 8 = 3$

The number of pencil is 3.

35.
$2 \) 18 \quad 12$
$3 \) 9 \quad 6$
$3 \quad 2$

⇨ $2 \times 3 = 6$

36. $\frac{11}{12} + \frac{19}{30} = \frac{55}{60} + \frac{38}{60} = \frac{93}{60} = 1\frac{33}{60} = 1\frac{11}{20} \Rightarrow 31$

37. $\frac{2}{3} - \frac{3}{7} = \frac{14}{21} - \frac{9}{21} = \frac{5}{21} \Rightarrow 26$

38. $3\frac{1}{2} \times 2 = \frac{7}{2} \times 2 = 7$

39. $12.3 \times 30 = 369$

40. $3 : 5 = x : 75$
$x \times 5 = 3 \times 75$
$x \times 5 \div 5 = 225 \div 5$
$x = 45$

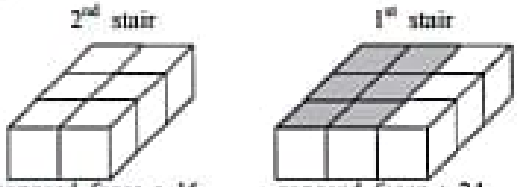
41.

$\left(\begin{matrix}4 \text{ bags of cookies} \\ 3 \text{ carton of milk}\end{matrix}\right) - \left(\begin{matrix}2 \text{ bags of cookies} \\ 3 \text{ carton of milk}\end{matrix}\right) = (2 \text{ bags of cookies})$

\$61 − \$ 41 = \$20

Therefore, the value of 1 bag of cookies is \$10.

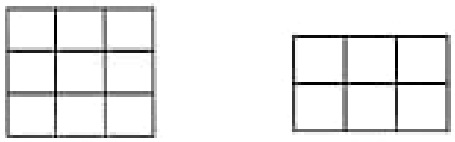
42.



exposed faces : 16 exposed faces : 24

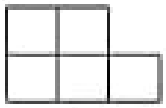
(other sol)

Top & Bottom view side view



9×2 6×2

Front & Back view

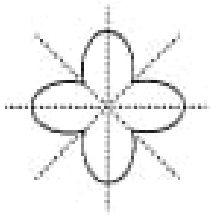


5×2

The total number of faces is

$(9 \times 2) + (6 \times 2) + (5 \times 2) = 40$.

43. We can draw 4 lines of symmetry as below



44. $\square 7 \times \triangle = \bigcirc 7$ ⇒ $\square \times \triangle = \bigcirc 7 \div \triangle$ Therefore, $\triangle$ is 3. $\bigcirc 7 \div \triangle$ is odd ⇒ $\square 7 \div 3 = 2\bigcirc 7$

The only number that makes the ones place value 7 multiplied by 3 is 9. Therefore $\square$ is 9. Therefore, the 3-digit number $\square\triangle\bigcirc$ is 933.

46. We can make each cube as below

47.

Hundreds	Tens	Ones	
6	6	7	⋯ 667
	7	6	⋯ 676
		7	⋯ 677
7	6	6	⋯ 766
		7	⋯ 767
	7	6	⋯ 776

48. Number pattern

A	B	C
2	10	8
9	3	1
8	10	2

⇒

A×C	B
16	10
9	3
16	10
4×3	□
5×□	14

Rule: A×C=B+6

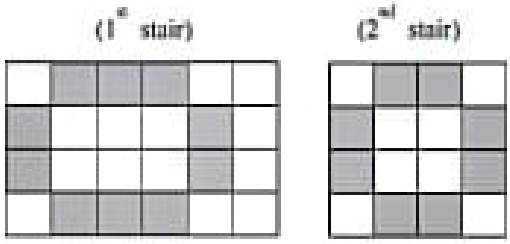
Therefore, missing numbers are 6 and 4.

49.

Number of unit blocks	1	2	3	4	5	6	7	8
Number of ways	8	6	4	2	4	3	2	1

Total number of ways : 8+6+4+2+4+3+2+1=30

50. The blocks with 2 painted faces in shown below.



⇒ (10+8)blocks

2015 Eye Level MATH Olympiad [Grade6]

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	5	11	63	21	17	31	36	41	10
2	6	12	180	22	4	32	18	42	③
3	35	13	630	23	3	33	31	43	6
4	5	14	13	24	1	34	47	44	20
5	35	15	5	25	1	35	20	45	50
6	15	16	5	26	504	36	7	46	12
7	995	17	6	27	7	37	67	47	18
8	3	18	9	28	45	38	121	48	4
9	12	19	5	29	45	39	177	49	3
10	14	20	7	30	32	40	32	50	4

【Sol】

29. $(15\times6)\div2=45$

30. $7\times12-((3\times2)\div2)-((5+9)\times7\div2)$
$=84-3-49$
$=32$

31. $(72\div8)\times(32\div8)=9\times4=36$

32. $\square\times8=144$, $\square=18$

33. $5.26-1.95=3.31 \Rightarrow 31$

34. $42.6+2.87=45.47 \Rightarrow 47$

35. The least common multiple of 5 and 7: 35

$5)\ 35\quad 20$ $\Rightarrow 140$
$\quad\ 7\quad 4$

$\Rightarrow$ 2hr 20min

36. $\frac{9}{14}+\frac{11}{21}=\frac{27}{42}+\frac{22}{42}=\frac{49}{42}=1\frac{7}{42}=1\frac{1}{6}$

$\Rightarrow 6+1=7$

37. $10\frac{4}{15}-9\frac{7}{9}=10\frac{12}{45}-9\frac{35}{45}=\frac{22}{45}$

$\Rightarrow 45+22=67$

38. $2\frac{5}{8}\times2\frac{5}{8}=\frac{21}{8}\times\frac{21}{8}=\frac{441}{64}=6\frac{57}{64}$

$\Rightarrow 64+57=121$

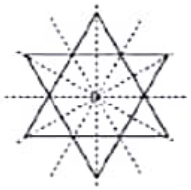
39. $5.9\times30=177$

40. $7:4=56:x$
$7\times x=4\times56$
$7\times x=224$
$x=32$

41.

1	2	3	4	…	9	10
3	5	7	9	…	19	21

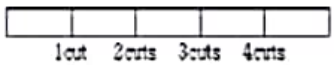
43.



45.

CD Player : S 40
magazine : S□
left : S5
Jimmy had S50. — S10

46.

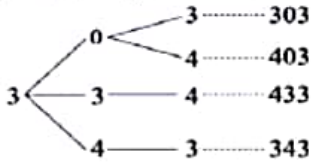


$3\times4=12(\text{min})$

47.

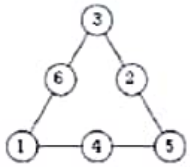
1 → $1\times2=2$ → □×○=2
2 → $2\times2=4$ → □×○=8
3 → $3\times2=6$ → □×○=15
4 → $4\times2=8$ → □×○=32

48. (Ones) (tens) (hundreds)



49. A, C, E

50.



2016 Eye Level MATH Olympiad [Grade6]

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	10	11	72	21	5	31	300	41	6
2	14	12	240	22	4	32	20	42	4
3	3	13	90	23	7	33	33	43	8
4	6	14	11	24	7	34	82	44	7
5	14	15	5	25	1	35	14	45	42
6	33	16	9	26	41	36	34	46	482
7	725	17	1	27	6	37	113	47	250
8	4	18	6	28	12	38	9	48	18
9	15	19	9	29	42	39	5	49	9
10	12	20	4	30	192	40	3	50	3

[Sol]

31. $1020-((1500-1020)\div 6\times 9)$
$=1020-720$
$=300$

32. $(5+\square)\times 2=18$, $\square=4$

$\rightarrow 5\times 4=20$

33. $2.73+3.6=6.33 \Rightarrow 33$

34. $120.5-68.68=51.82 \Rightarrow 82$

35.

$14\overline{)\ 28\quad 70} \rightarrow 14$
$\quad\ \ 2\quad\ 5$

$14\overline{)\ 14\quad 42} \rightarrow 14$
$\quad\ \ 1\quad\ 3$

$\Rightarrow 14$

36. $1\frac{5}{6}+2\frac{11}{14}=1\frac{35}{42}+2\frac{33}{42}=3\frac{68}{42}=4\frac{26}{42}=4\frac{13}{21}$

$\Rightarrow 21+13=34$

37. $5\frac{7}{12}-3\frac{7}{10}=5\frac{35}{60}-3\frac{42}{60}=1\frac{53}{60}$

$\rightarrow 60+53=113$

38. $3\frac{3}{5}\times 2\frac{4}{9}=\frac{18}{5}\times\frac{22}{9}=\frac{396}{45}=\frac{44}{5}=8\frac{4}{5}$

$\rightarrow 5+4=9$

39. $1.5\times 7=10.5$

$\Rightarrow 5$

40. $78.2 : 117.3$
$=782 : 1173$
$=46 : 69$
$=2 : 3$
$\rightarrow B=3$

41. Make a table for the number of squares:

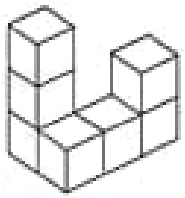
Figure Number	1	2	3	4	5	6
Number of square	3	6	11	18	27	38
		+3	+5	+7	+9	+11

Therefore, the number you are looking for figure number is 6.

42. Line symmetric shapes are 4 : A, C, D, and E.

43. Students who played at least one sport are $30-5=25$.
Therefore, students who played both soccer and basketball are $18+15-25=8$

44. The blocks are built like this:



Therefore, the number of blocks is 7.

45. The rule is as follows:

$\boxed{14}=(2)\times 7=2\times(\triangle 5+2)$

$\boxed{45}=(9)\times 5=9\times(\triangle 3+2)$

You can get A, B, C according to this pattern .

$\boxed{20} = (5) \times 4 = 5 \times (\triangle + 2) \Rightarrow A=2$

$\boxed{B} = 4 \times (6+2) = 4 \times 8 = 32 \Rightarrow B=32$

$\boxed{40} = (C) \times (3+2) = C \times 5 \Rightarrow C=8$

Therefore $A+B+C = 2+32+8 = 42$.

46. . You can find A, B, C this way:

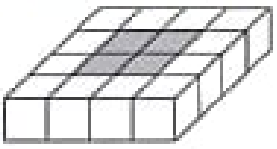
$$\begin{array}{r} 9\ A \\ \times\ \ B \\ \hline 7\ 5\ C \end{array} \overset{B=8}{\Longrightarrow} \begin{array}{r} 9\ A \\ \times\ \ 8 \\ \hline 7\ 5\ C \end{array} \overset{A=4}{\Longrightarrow}$$

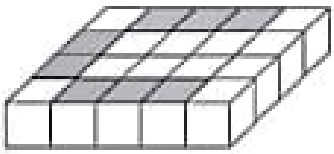
$$\begin{array}{r} 9\ 4 \\ \times\ \ 8 \\ \hline 7\ 5\ C \end{array} \overset{C=2}{\Longrightarrow} \begin{array}{r} 9\ 4 \\ \times\ \ 8 \\ \hline 7\ 5\ C \end{array}$$

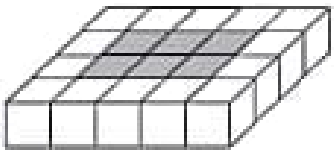
Therefore, the 3-digit number ABC is 482.

47. From 3 apples and 4 oranges, exchange an orange with an apple, then you have 4 apples and 3 oranges, which weigh 30g more. When you exchange 4 oranges with 4 apples, the added weight will be $30 \times 4 = 120$(g), which means 7 apples weigh $1\text{kg}\,630\text{g} + 120\text{g} = 1\text{kg}\,750\text{g} = 1{,}750\text{g}$. Therefore, one apple weigh $1750 \div 7 = 250$(g).

48. Pieces with only one side painted are:

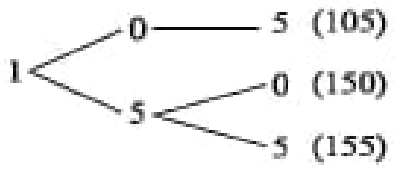
(in the level 3) 

(in the level 2) 

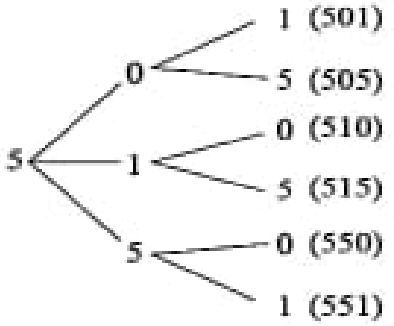
(in the level 1) 

Therefore the answer is 18pieces.

49. Inspect numbers with 1 and 5 in the 'hundreds' place



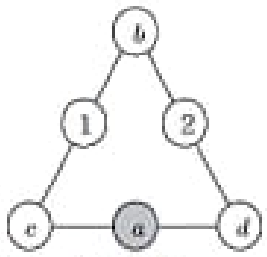
(3 numbers)



(6 numbers)

Therefore the answer is 9 numbers.

50. Find a, b, c, and d in the picture.



$b+1+c = b+2+d$ hence $c = d+1$.

(1) when $c=4$, $d=3$; if you put the remaining numbers 5, 6 in a, b, it will not satisfy the condition.

(2) when $c=5$, $d=4$; if you put , $a=3$, $b=6$ the sum of the 3 numbers is 12 on any side.

(3) When $c=6$, $d=5$; if you put the remaining numbers 3, 4 in a, b, it will not satisfy the condition.

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No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	11	11	108	21	87	31	5	41	7
2	4	12	120	22	5	32	880	42	72
3	22	13	504	23	25	33	420	43	23
4	94	14	5	24	1	34	119	44	10
5	74	15	10	25	2	35	7	45	5
6	43	16	7	26	333	36	17	46	9
7	449	17	4	27	15	37	13	47	6
8	2	18	5	28	4	38	8	48	14
9	3	19	3	29	114	39	20	49	9
10	7	20	5	30	174	40	34	50	4