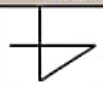
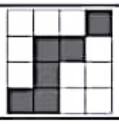
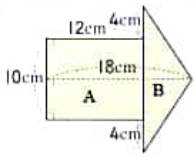
# 2012 Eye Level MATH Olympiad [Grade5]

| No. | Answer | No. | Answer | No. | Answer | No. | Answer | No. | Answer |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13R5 | 11 | 30 | 21 | $\frac{4}{7}$ | 31 | 16, 4 | 41 |  |
| 2 | 12R1(12.125) | 12 | 17 | 22 | $\frac{2}{3}$ | 32 | 136 | 42 |  |
| 3 | 16R13(=16.25) | 13 | 38 | 23 | $7\frac{3}{7}$ | 33 | 55 | 43 | 9, 8 |
| 4 | 75R32 | 14 | 22 | 24 | $1\frac{2}{9}$ | 34 | 17 | 44 | 45 |
| 5 | 268R17 | 15 | 11km 920m | 25 | $10\frac{7}{60}$ | 35 | 9, 55, 55 | 45 | 4 |
| 6 | 11R125 | 16 | 20kg 200g | 26 | $1\frac{17}{28}$ | 36 | $\frac{2}{9}$ | 46 | 11 |
| 7 | 26 | 17 | 1L 753mL | 27 | $\frac{5}{12}$ | 37 | $1\frac{3}{5}$ | 47 | 49 |
| 8 | 15 | 18 | 7hr 21min 10sec | 28 | $\frac{64}{225}$ | 38 | 91.02 | 48 | 70 |
| 9 | 10 | 19 | 1hr 41min 43sec | 29 | 28 | 39 | $\frac{37}{60}$ | 49 | 10 |
| 10 | 0 | 20 | $\frac{5}{6}$ | 30 | 174 | 40 | 72 | 50 | 236, 16 |

【Sol】

**29.** $(8+6)\times 4\div 2=28\,(cm^2)$

**30.**




A: $12\times 10=120\,(cm^2)$

B: $18\times 6\div 2=54\,(cm^2)$

A+B: $120+54=174\,(cm^2)$

**31.** 12×7÷5=84÷5=16R4

**32.** 5428÷40=135R28

**33.** (15+5)×3-5=55

**34.** 3+40÷5×3-10=3+24-10=17

**35.** 8hr 25min 10sec+1hr 30min 45sec
=9hr 55min 55sec

**36.** $2\frac{1}{9}-1\frac{8}{9}=1\frac{10}{9}-1\frac{8}{9}=\frac{2}{9}$

**37.** $2\frac{1}{5}+1\frac{1}{5}-1\frac{4}{5}=2\frac{7}{5}-1\frac{4}{5}=1\frac{3}{5}$

**38.** 153.8-62.78=91.02

**39.** $\frac{4}{15}+\frac{7}{20}=\frac{16}{60}+\frac{21}{60}=\frac{37}{60}$

**40.** $40\times 1\frac{4}{5}=40\times\frac{9}{5}=72$

**41.**

**43.** $1 \xrightarrow{\times 2} 2 \xrightarrow{\times 2+1} 5$

$2 \xrightarrow{\times 2} 4 \xrightarrow{\times 2+1} 9$

$4 \xrightarrow{\times 2} 8 \xrightarrow{\times 2+1} 17$

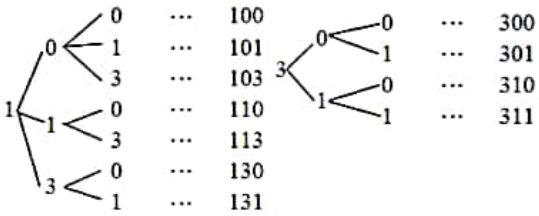
$7 \xrightarrow{\times 2} 14 \xrightarrow{\times 2+1} 29$

**44.** 10 (1)
20, 21 (2)
30, 31, 32 (3)
...
90, 91, 92, ..., 98 (9)

➜ 1+2+3+4+...+9=45

**45.** 10+9+6=25, 10+8+7=25, 9+9+7=25, 9+8+8=25

**46.**

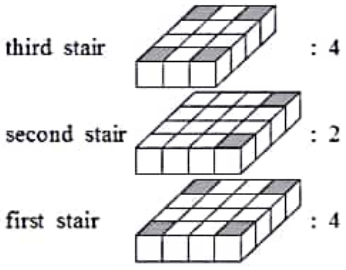



**47.**

| Figure Number | □ | □ | □ | ... | □ |
|---|---|---|---|---|---|
| Number of • | 2×2=4 | 3×3=9 | 4×4=16 | ... | 7×7=49 |

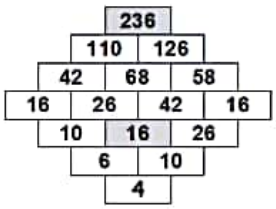
**48.** 1 person in 1 hour : 7 dolls
5 persons in 1 hour : 35 dolls
5 persons in 2 hours : 70 dolls

**49.**

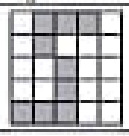



➜ 4+2+4=10

**50.**



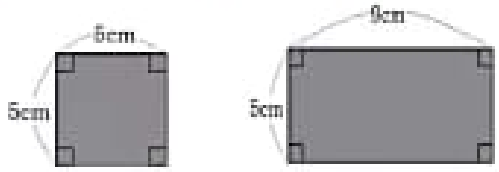
# 2013 Eye Level MATH Olympiad [Grade5]

| No. | Answer | No. | Answer | No. | Answer | No. | Answer | No. | Answer |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 12R5 | 11 | 47 | 21 | $\frac{4}{5}$ | 31 | 11, 5 | 41 | 20 |
| 2 | 10R8 | 12 | 11 | 22 | $\frac{3}{7}$ | 32 | 6, 21 | 42 | 6 |
| 3 | 17R6 | 13 | 7 | 23 | $5\frac{2}{11}$ | 33 | 2 | 43 | 8 |
| 4 | 88R48 | 14 | 2 | 24 | $1\frac{3}{7}$ | 34 | 38 | 44 | 38 |
| 5 | 302R6 | 15 | 2km 880m | 25 | $5\frac{8}{9}$ | 35 | 9 | 45 | 30 |
| 6 | 30R156 | 16 | 7kg 790g | 26 | $2\frac{5}{28}$ | 36 | $46\frac{2}{9}$ | 46 | $4\frac{3}{5}$ |
| 7 | 40 | 17 | 11L 300mL | 27 | $\frac{5}{12}$ | 37 | $\frac{1}{2}\left(\frac{5}{10}\right)$ | 47 |  |
| 8 | 27 | 18 | 5hr 8min 20sec | 28 | $1\frac{7}{8}$ | 38 | 91.02 | 48 | A=1, B=2, C=120 |
| 9 | 50 | 19 | 1hr 34min 35sec | 29 | 14 | 39 | $\frac{19}{40}$ | 49 | 18 |
| 10 | 7 | 20 | $\frac{8}{9}$ | 30 | 70 | 40 | 18 | 50 | 7 |

【Sol】

**29.** □ × 7 ÷ 2 = 49, □ × 7 = 98, □ = 14

**30.**




⇒ 5 × 5 + 5 × 9 = 25 +45 =70(cm²)

**31.** 82÷7=11R5

**32.** 243÷37=6R21

**33.** (18÷3)-(24÷6)=6-4=2

**34.** (10÷5)×3+25+7=38

**35.** 360÷(20×2)=360÷40=9

**36.** $23\frac{4}{9}+22\frac{7}{9}=45\frac{11}{9}=46\frac{2}{9}$

**37.** $1-\frac{3}{10}-\frac{2}{10}=\frac{5}{10}=\frac{1}{2}$

**38.** 153.8-62.78=91.02

**39.** $\frac{1}{10}+\frac{3}{8}=\frac{19}{40}$

**40.** $7\frac{1}{5}\times 2\frac{1}{2}=18$

**41.** There are 20 numbers as below.

505, 515, 525, ... , 595

606, 616, 626, ... , 696

**42.** Using the pattern we would complete the table.

| Figure number | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Number of ■ | 4 | 7 | 12 | 19 | 28 | 39 |
| | | +3 | +5 | +7 | +9 | +11 |

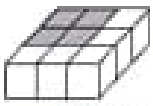
**43.**

(3 bags of cookies, 4 cartons of milk) - (2 bags of cookies, 3 cartons of milk) = (1 bags of cookies, 1 cartons of milk)

$29 - $21 = $8

**44.**


: exposed faces of 2nd stair : 12


: exposed faces of 1st stair : 26

∴ 12+26 = 38

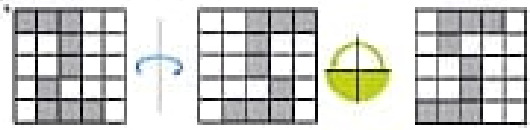
**45.** 6 × 5 = 30

**46.** condition 1 : $2\frac{1}{3}$, $3\frac{1}{2}$, $4\frac{3}{5}$, $7\frac{1}{4}$

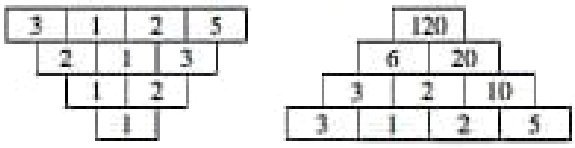
condition 2 : $4\frac{3}{5}$, $7\frac{1}{4}$

condition 3 : $4\frac{3}{5}$

**47.**



**48.** First, we find the values that belong in the blank spaces from 1st row to 4th row.
Next, we find the values that belong in the blank spaces from 4th row to 7th row.




Therefore, A=1, B=2, C=120

**49.** $(18+12+9+15)*3$

$= 6+4+3+5=18$

**50.**

| | Number of arrows that could hit each ring | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1points | 3 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| 3points | 0 | 1 | 0 | 2 | 1 | 0 | 3 | 2 | 1 | 0 |
| 5points | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 3 |
| Total score | 3 | 5 | 7 | 7 | 9 | 11 | 9 | 11 | 13 | 15 |

The Possible scores : 3, 5, 7, 9, 11, 13, 15
The number of Possible scores : 7

# 2014 Eye Level MATH Olympiad [Grade5]

| No. | Answer | No. | Answer | No. | Answer | No. | Answer | No. | Answer |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | 11 | 26 | 21 | 11 | 31 | 2 | 41 | 1 |
| 2 | 15 | 12 | 7 | 22 | 3 | 32 | 92 | 42 | 26 |
| 3 | 18 | 13 | 12 | 23 | 8 | 33 | 3 | 43 | 27 |
| 4 | 21 | 14 | 80 | 24 | 8 | 34 | 2 | 44 | 8 |
| 5 | 9 | 15 | 343 | 25 | 17 | 35 | 32 | 45 | 16 |
| 6 | 342 | 16 | 852 | 26 | 2 | 36 | 6 | 46 | 315 |
| 7 | 4 | 17 | 24 | 27 | 1 | 37 | 5 | 47 | 6 |
| 8 | 26 | 18 | 58 | 28 | 13 | 38 | 24 | 48 | 34 |
| 9 | 31 | 19 | 85 | 29 | 169 | 39 | 101 | 49 | 5 |
| 10 | 20 | 20 | 9 | 30 | 56 | 40 | 41 | 50 | 8 |

**[Sol]**

**29.** $(16+10)\times13\div2=26\times13\div2=169$

**30.** $(4+(4+8+4))\times12\div2-(8\times8)=120-64=56$

**31.** $80\div3=26R2$

**32.** $1932\div21=92$

**33.** $15-(24\div2)=15-12=3$

**34.** $20-(6+3)\times9=2$

**35.** (3hr 17min 30sec)+(3hr 47min 50sec)
=7hr 5min 20sec $\Rightarrow$ 7+5+20=32

**36.** $21\times\frac{1}{2}-\square=6$
$12-\square=6$
$\square=6$

**37.** $3\frac{1}{3}-2\frac{2}{3}=\frac{2}{3}\Rightarrow 5$

**38.** $2\overline{)\,6\quad 8}$ $\Rightarrow 2\overline{)\,24\quad 12}$ $\Rightarrow 24$
$3\quad 4$ $2\overline{)\,12\quad 6}$
$3\overline{)\,6\quad 3}$
$2\quad 1$

**39.** $\frac{5}{12}+\frac{4}{15}=\frac{25}{60}+\frac{16}{60}=\frac{41}{60}\Rightarrow 101$

**40.** $3\frac{3}{14}-1\frac{5}{21}=3\frac{9}{42}-1\frac{10}{42}=1\frac{41}{42}\Rightarrow 41$

**41.** Complete the table to show the ones place values.

| Time multiplied | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ones place value | 7 | 9 | 3 | 1 | 7 | 9 | 3 | 1 | 7 | 9 | 3 | 1 |

**42.** The number of squares increases by 3 when the order increases by 1.

| order | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| The number of squares | 3×1+2 =5 | 3×2+2 =8 | 3×3+2 =11 | 3×4+2 =14 | 3×5+2 =17 | 3×6+2 =20 | 3×7+2 =23 | 3×8+2 =26 |

**43.** The 1st Monday is 6th.
Therefore, Monday is 6th, 13th, 20th, 27th.

**44.** The following shows the place of each animal in the race.


Therefore, Cougar is 8cm ahead of Kanguroo.

**45.** Make the table as below.

| ♡ | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|
| ◇ | 1 | 2 | 3 | 4 | 5 |
| ♡×◇ | 9 | 20 | 33 | 48 | 65 |

Therefore, ♡=12, ◇=4, and ♡+◇=16

**46.** $5+6+7+\cdots+23+24+25$

30

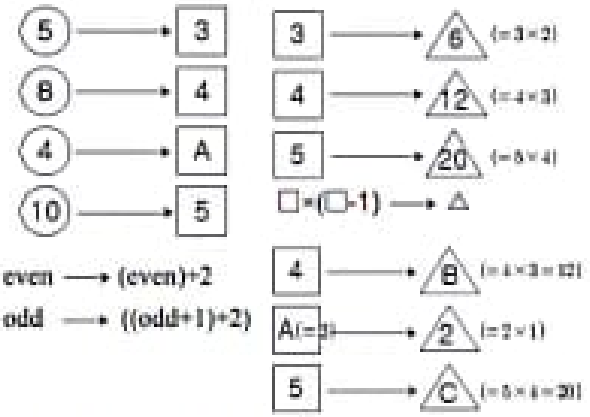
30

30

The pairs having a sum of 30 are
(5, 25), (6, 24), ⋯ , (14, 16).
There are 10 pairs and 15 alone.
Therefore, the sum is $30\times10+15=315$.

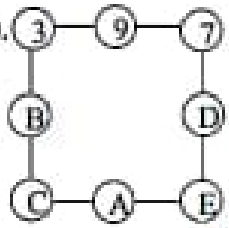
**47.** Since the ones places is 2, 3-digit even numbers can be made as below;
352, 372, 532, 572, 732, 752

**48.**



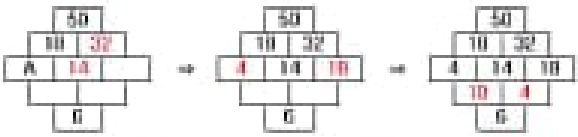

∴ A+B+C=2+12+20=34

**49.**




9 goes between 3 and 7.
B+C=16 ⇒ (B, C) = (6, 10)
or (10, 6)
D+E=12 ⇒ (D, E) = (4, 8)
or (8, 4)
Then, available number A is 5.

**50.** We can calculate step by step as below.




Since A=4, B=4, the value of A+B is 4×4=16

# 2015 Eye Level MATH Olympiad [Grade5]

| No. | Answer | No. | Answer | No. | Answer | No. | Answer | No. | Answer |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 11 | 15 | 21 | 11 | 31 | 2 | 41 | ① |
| 2 | 13 | 12 | 17 | 22 | 7 | 32 | 17 | 42 | 26 |
| 3 | 19 | 13 | 14 | 23 | 5 | 33 | 43 | 43 | 3 |
| 4 | 21 | 14 | 70 | 24 | 11 | 34 | 82 | 44 | 10 |
| 5 | 8 | 15 | 624 | 25 | 17 | 35 | 82 | 45 | 6 |
| 6 | 272 | 16 | 934 | 26 | 21 | 36 | 9 | 46 | 6 |
| 7 | 4 | 17 | 9 | 27 | 3 | 37 | 8 | 47 | 4 |
| 8 | 34 | 18 | 57 | 28 | 21 | 38 | 7 | 48 | 9 |
| 9 | 55 | 19 | 71 | 29 | 70 | 39 | 26 | 49 | ② |
| 10 | 13 | 20 | 9 | 30 | 144 | 40 | 2 | 50 | 4 |

**【Sol】**

**29.** $(5\times10)+(9-5)\times(10-5)$
$=50+4\times5$
$=50+20$
$=70$

**30.** $(20\times20)-(8\times8)\times4$
$=400-256$
$=144$

**31.** $67\div5=13\,\mathrm{R}\,2$

**32.** $323\div19=17$

**33.** $5\times(3+2)+3\times(3+3)$
$=5\times5+3\times6$
$=25+18$
$=43$

**34.** $(17+5)\times4-6=22\times4-6$
$=88-6$
$=82$

**35.**

| | | | |
|---|---|---|---|
| | 5hr | 36min | 42sec |
| + | 4hr | 54min | 59sec |
| | 10hr | 31min | 41sec |

$\Rightarrow10+31+41=82$

**36.** $\frac{79}{7}=11\frac{2}{7}<11\frac{4}{7}<12\frac{5}{7}=\frac{89}{7}$

$\Rightarrow2+7=9$

**37.** $2-1\frac{2}{5}=\frac{3}{5}\ \Rightarrow5+3=8$

**38.**

| 7) | 42 | 35 | 14 |
|---|---|---|---|
| | 6 | 5 | 2 |

$\Rightarrow7$

**39.** $\frac{1}{3}+\frac{2}{5}=\frac{5}{15}+\frac{6}{15}=\frac{11}{15}$

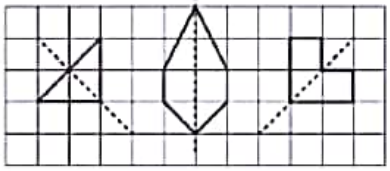
$\Rightarrow15+11=26$

**40.** $12\frac{9}{13}\div11=\frac{165}{13}\times\frac{1}{11}=\frac{15}{13}=1\frac{2}{13}$

$\Rightarrow2$

**42.** The second Sunday is $10^{th}$
The second Tuesday is $12^{th}$
The fourth Tuesday is $(12+7+7)^{th}=26^{th}$

**43.**



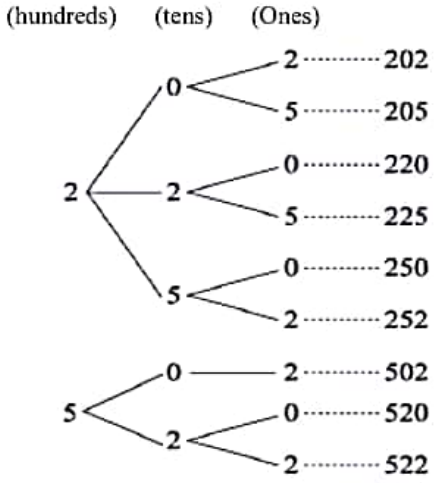
**44.** $\begin{cases}5-1=4\\5\times1=5\end{cases}$ $\begin{cases}6-2=4\\6\times2=5\end{cases}$ $\begin{cases}7-3=4\\7\times3=21\end{cases}$
$\begin{cases}8-4=4\\8\times4=32\end{cases}$ $\begin{cases}9-5=4\\9\times5=45\end{cases}$ $\begin{cases}10-6=4\\10\times6=60\end{cases}$

**45.**

| Times multipied | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Ones place value | 8 | 4 | 2 | 6 | 8 | 4 | 2 | 6 |

**46.**

**48.**




**50.**

$2+3+6=11$

$2+\bigcirc+\bigcirc=11$

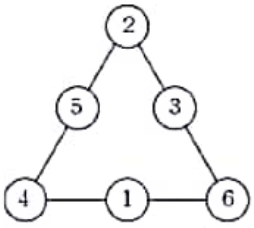
$6+\bigcirc+\bigcirc=11$

$\bigcirc+\bigcirc=9$

$(5+4=9)$

$\bigcirc+\bigcirc=5$

$(1+4=5)$



# 2016 Eye Level MATH Olympiad [Grade5]

| No. | Answer | No. | Answer | No. | Answer | No. | Answer | No. | Answer |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 11 | 33 | 21 | 8 | 31 | 13 | 41 | 11 |
| 2 | 14 | 12 | 1 | 22 | 2 | 32 | 10 | 42 | ② |
| 3 | 38 | 13 | 29 | 23 | 2 | 33 | 20 | 43 | 5 |
| 4 | 77 | 14 | 857 | 24 | 7 | 34 | 500 | 44 | 7 |
| 5 | 36 | 15 | 232 | 25 | 17 | 35 | 98 | 45 | 30 |
| 6 | 87 | 16 | 427 | 26 | 4 | 36 | 13 | 46 | 14 |
| 7 | 7 | 17 | 73 | 27 | 1 | 37 | 16 | 47 | 11 |
| 8 | 24 | 18 | 33 | 28 | 54 | 38 | 29 | 48 | 22 |
| 9 | 38 | 19 | 76 | 29 | 5 | 39 | 59 | 49 | 21 |
| 10 | 5 | 20 | 15 | 30 | 32 | 40 | 1 | 50 | 42 |

**【Sol】**

**29.** $(10+6)\times\square\div 2=40$
$16\times\square=80$
$\square=5$

**30.** $(12\times 7)-(3\times 2\div 2)-((9+5)\times 7\div 2)$
$=84-3-49$
$=32$

**31.** $78\div 6=13$

**32.** $888\div 96=9\,\mathrm{R}\,24$

**33.** $65-(7\times 6+3)$
$=65-45$
$=20$

**34.** $2000-(2000\div 8)\times 6$
$=2000-250\times 6$
$=500$

**35.**

| | 3hr | 13min | 40sec |
|---|---|---|---|
| − | 1hr | 20min | 55sec |
| | 1hr | 52min | 45sec |

$\Rightarrow 1+52+45=98$

**36.** $\frac{83}{7}=11\frac{6}{7}<12<12\frac{3}{7}$

$\rightarrow 7+6=13$

**37.** $3\frac{4}{9}+1\frac{4}{9}-1\frac{1}{9}=3\frac{7}{9}$

$\Rightarrow 7+9=16$

**38.** $7.52-7.23=0.29\Rightarrow 29$

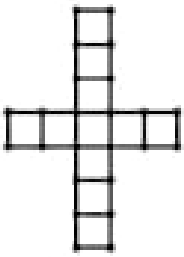
**39.** $\frac{5}{9}+\frac{1}{12}=\frac{20}{36}+\frac{3}{36}=\frac{23}{36}$

$\rightarrow 36+23=59$

**40.** $\left(2\frac{4}{7}\times\frac{2}{5}\right)\times 7=\frac{18}{7}\times\frac{2}{5}\times 7=\frac{36}{5}=7\frac{1}{5}$

$\rightarrow 1$

**41.** The picture at $\boxed{6}$ looks like this:



Therefore, you have 11 squares.

**43.** The following relationships hold:

○△△=△☆☆

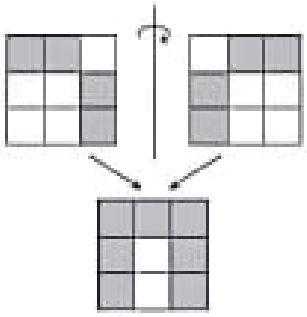
○△△△=△△☆☆

=○○○

Hence, ○○=△△△

Therefore, ○○△△=△△△△△.

**44.** Draw the pictures:



Therefore, colored squares are 7.

**45.** The rule is as follows:

1 ⇒ 1 (1×2−1) 1 ⇒ 1 (1×3)

4 ⇒ 7 (4×2−1) 3 ⇒ 9 (3×3)

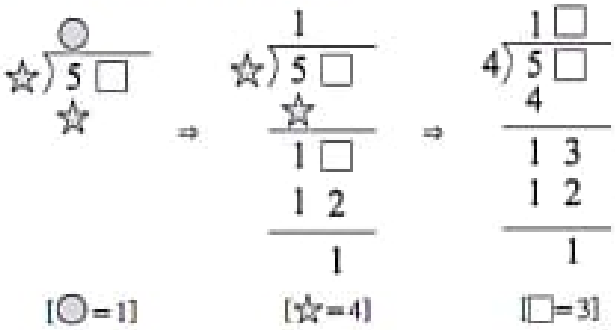
5 ⇒ 9 (5×2−1) 7 ⇒ 21 (7×3)

8 ⇒ 15 (8×2−1) 15 ⇒ 45 (15×3)

2 ⇒ 2×2−1=3 (A=3) 9 ⇒ B (9×3) (B=27)

Therefore $A+B=3+27=30$.

**46.** You get each number this way.



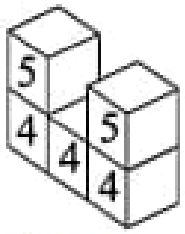
[○=1] [☆=4] [□=3]

Therefore 2-digit number ○☆ is 14.

**47.** When you use ○ for each student, the runners look like this:


Therefore, 11 students are running.

**48.** Write the number of painted areas on each block:




Therefore, painted areas are
$5+5+4+4+4=22$.

**49.** Inspect numbers where the digit in the 'tens' place is 2, 3, 4, 5, 6, 7

120, 121(2 numbers)

130, 131, 132(3 numbers)

140, 141, 142, 143(4 numbers)

150, 151, 152, 153, 154(5 numbers)

160, 161, 162, 163, 164, 165(6 numbers)

170(1 numbers)

Therefore, there are 21 numbers.

**50.** In the second row $a+(a+b)=37$,
in the second column $(a+b)+b=41$,
therefore $b=a+4$.
In the second row
$a+a+b=a+a+(a+4)=(a+a+a)+4=37$,
therefore $a=11$.
And $b=a+4=11+4=15$.
In the first column
$a+a+c=11+11+c=38$,
hence $c=16$.
Therefore, $A=a+b+c=11+15+16=42$.

# 2017 Eye Level MATH Olympiad [Grade5]

| No. | Answer | No. | Answer | No. | Answer | No. | Answer | No. | Answer |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14 | 11 | 27 | 21 | 16 | 31 | 7 | 41 | 100 |
| 2 | 16 | 12 | 48 | 22 | 9 | 32 | 23 | 42 | 23 |
| 3 | 23 | 13 | 3 | 23 | 1 | 33 | 2 | 43 | 5 |
| 4 | 18 | 14 | 973 | 24 | 13 | 34 | 16 | 44 | 6 |
| 5 | 53 | 15 | 238 | 25 | 1 | 35 | 19 | 45 | 5 |
| 6 | 111 | 16 | 641 | 26 | 2 | 36 | 176 | 46 | 6 |
| 7 | 8 | 17 | 93 | 27 | 1 | 37 | 2 | 47 | 6 |
| 8 | 40 | 18 | 33 | 28 | 27 | 38 | 19 | 48 | 7 |
| 9 | 31 | 19 | 70 | 29 | 6 | 39 | 6 | 49 | 10 |
| 10 | 20 | 20 | 7 | 30 | 56 | 40 | 20 | 50 | 5 |