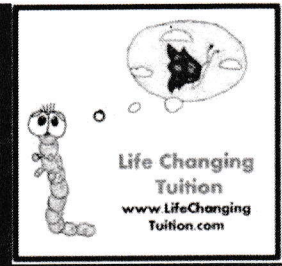
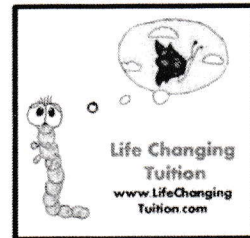


## Number Patterns and Sequences (1)



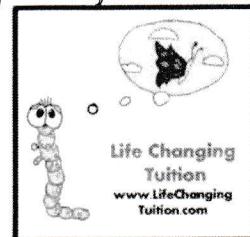
List the first 10 Prime Numbers

2, 3, 5, 7, 11, 13, 17, 19, 23, 29



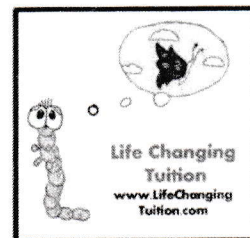
List the first 10 Square Numbers

1, 4, 9, 16, 25, 36, 49, 64, 81, 100,



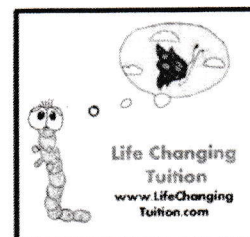
List the first 5 Cube Numbers

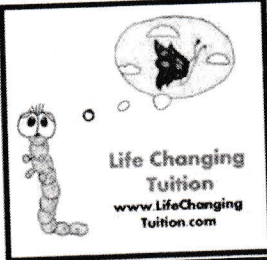
1, 8, 27, 64, 125



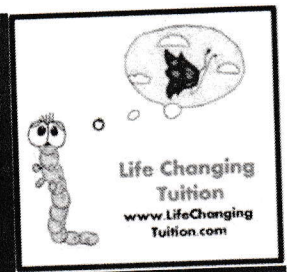
List the first 5 Triangular Numbers

1, 3, 6, 10, 15





# Number Patterns and Sequences (2)



1) Find the missing number in the following number sequences

3, 6, 9, ~~12~~, 15  
....., 42

5, 50, 500, ~~5000~~, 50 000

7, ~~14~~, 21, 28,

$\frac{1}{2}$ , 1, ~~1.5~~, 2,  $2\frac{1}{2}$

50, ~~40~~, 30, 20, 10

1, 4, 9, ~~16~~

21.2, 21.5, 21.8, ~~22.1~~, 22.4

4, 8, 16, ~~32~~, 64, ~~128~~

32, 3.2,

0.32, ~~0.032~~, 0.0032

5.2, 6.9, 8.6, ~~10.3~~

19.3, 18.6, ~~17.9~~

$96\frac{1}{3}$ ,  $96\frac{2}{3}$ , 97,  $97\frac{1}{3}$ ,  ~~$97\frac{2}{3}$~~   
~~17.2~~, .....

2) Max read a book. On the first day he read up to page 6. On the second day he read up to page 12. On the third day he read up to page 18.

Explain the rule for this sequence? .....  $+ 6$  .....

What page will he be up to on the fourth day? .....  $24$  .....

How many pages will he have read up to on the eleventh day? .....  $66$  .....

3) Imagine you made the following sequence of patterns using matches. Draw the next three patterns.

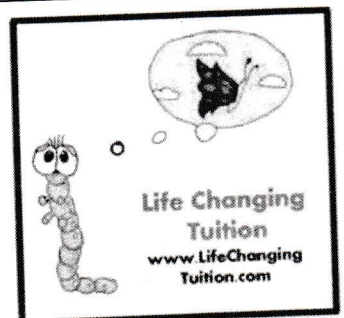


Fill out the table below to show how many matches you would need for each diagram number

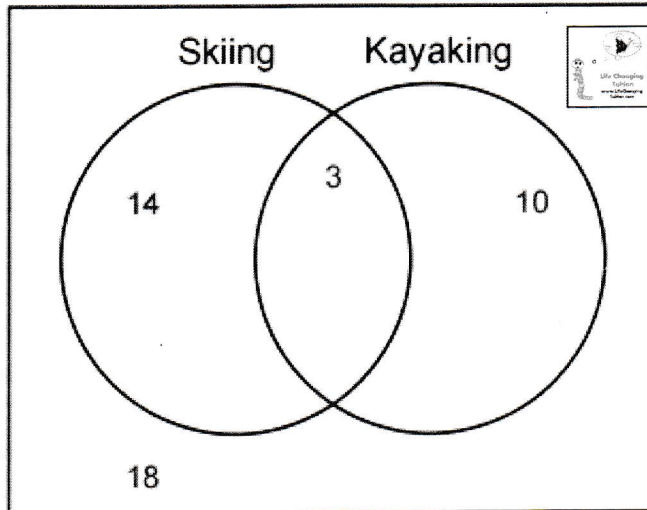
Diagram Number	1	2	3	4	5	6	10	25
Matchsticks	3	6	9	12	15	18	21	24

Write the rule for this pattern: .....  $+ 3$  .....

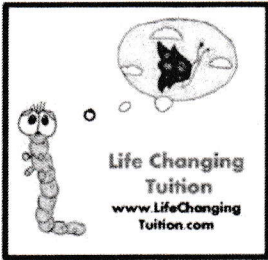
What formula could you use for this pattern? .....  $n + 3$  .....



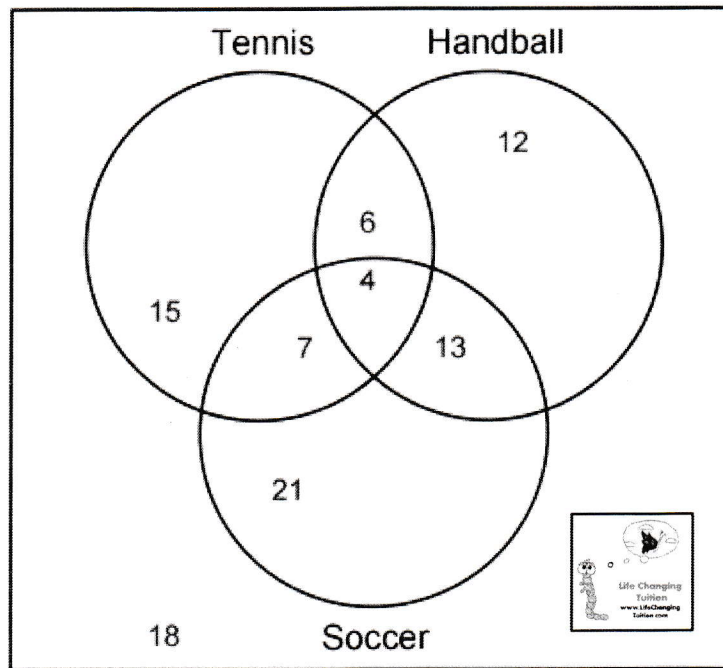
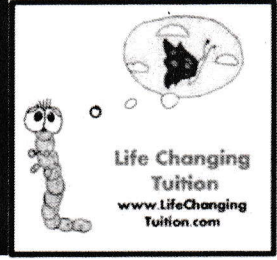
## Venn Diagrams and Bearings (1)



- 1) How many students like Skiing or Kayaking ? 27
- 2) How many students only like Kayaking ? 10
- 3) How many students like Kayaking ? 13
- 4) How many students do not like Skiing ? 28
- 5) How many students like both Skiing and Kayaking ? 3
- 6) How many students like Skiing ? 17
- 7) How many students do not like Kayaking ? 32
- 8) How many students only like Skiing ? 14
- 9) How many students do not like both Skiing and Kayaking ? ~~24~~ 24
- 10) How many students do not like either Skiing or Kayaking ? 18

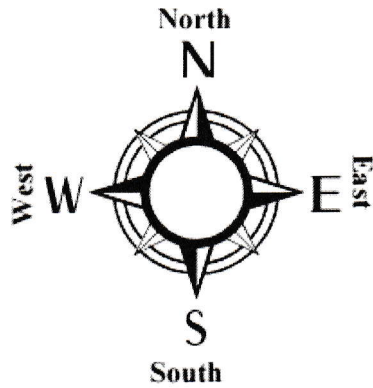
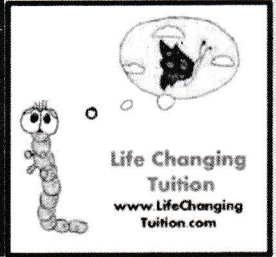
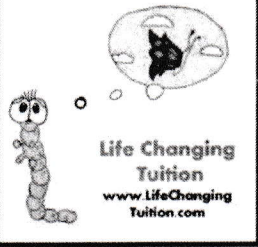


## Venn Diagrams and Bearings (2)



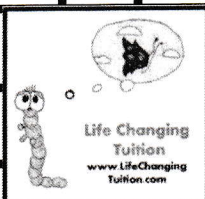
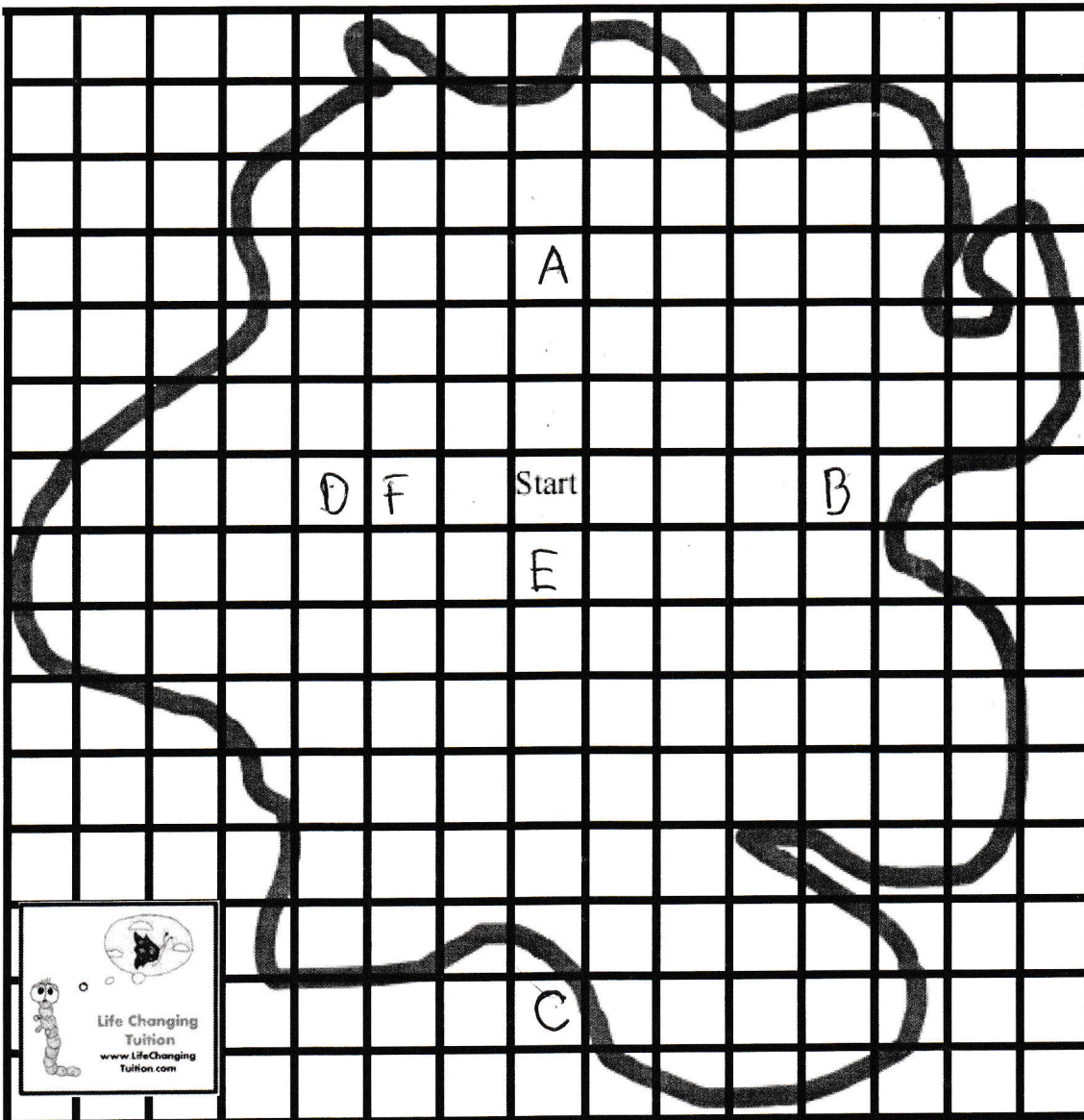
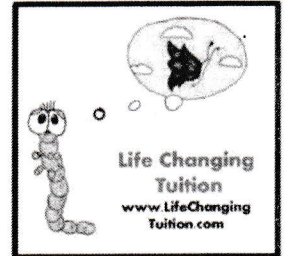
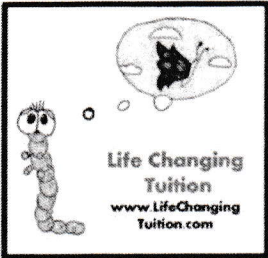
- 1) How many students do not like both Tennis and Soccer ? 30
- 2) How many students like Tennis or Handball ? 6
- 3) How many students do not like either Handball or Soccer ? 22
- 4) How many students like Tennis or Soccer but not Handball ? 44
- 5) How many students like both Tennis and Handball ? 10
- 6) How many students like Tennis or Handball or Soccer ? 4
- 7) How many students like Tennis or Handball but not Soccer ? 6
- 8) How many students only like Tennis ? 15
- 9) How many students only like Handball ? 12
- 10) How many students do not like both Handball and Soccer ? 30

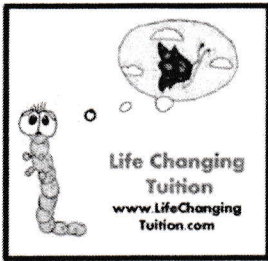
# Venn Diagrams and Bearings (3)



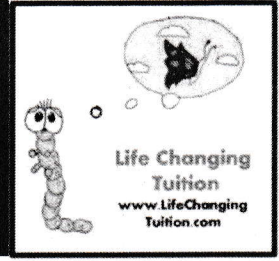
**Find the treasure...**

- Go north 3 squares (A)
- Go east 4 squares (B)
- Go south 7 squares (C)
- Go west 3 squares (D)
- Go south 1 square (E)
- Go west 2 squares (F)
- Go north 8 squares (X)





## Venn Diagrams and Bearings (4)



Which way are you facing if...

- (1) You are facing north. You make a half turn clockwise.

S

- (2) You are facing south and you make a quarter turn clockwise.

W

- (3) You are facing East and you make a quarter turn anti-clockwise

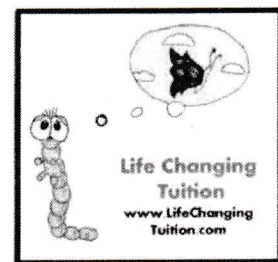
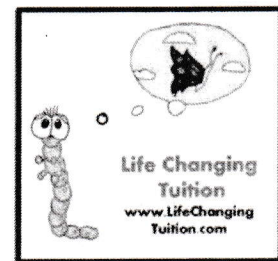
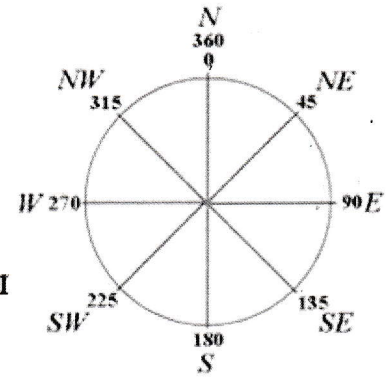
N

- (4) You are facing west and you make a quarter turn clockwise.

N

- (5) You are facing North West and you make a half turn clockwise.

SE



## Degrees of a circle

- (1) You are facing north. You turn 180 degrees anti-clockwise.

S

- (2) You are facing west. You turn 360 degrees clockwise.

W

- (3) You are facing South-West. You turn 90 degrees clockwise.

NW

- (4) You are facing South East. You make a quarter turn clockwise.

SW

- (5) You are facing north east. You make a three quarter turn anti-clockwise.

SE