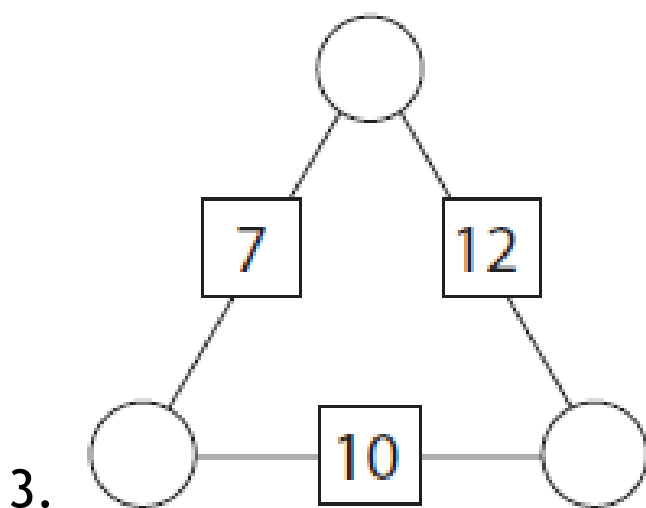# ARITHMOGONS

The number in a square must be the sum of the numbers on each side of it.

For example: (3)—[7]—(4)

1.
```
        (8)
      []    []
  (3)——[]——(4)
```

2.
```
        ( )
     [21]    [27]
  ( )——[26]——( )
```

3.
```
        ( )
      [7]    [12]
  ( )——[10]——( )
```
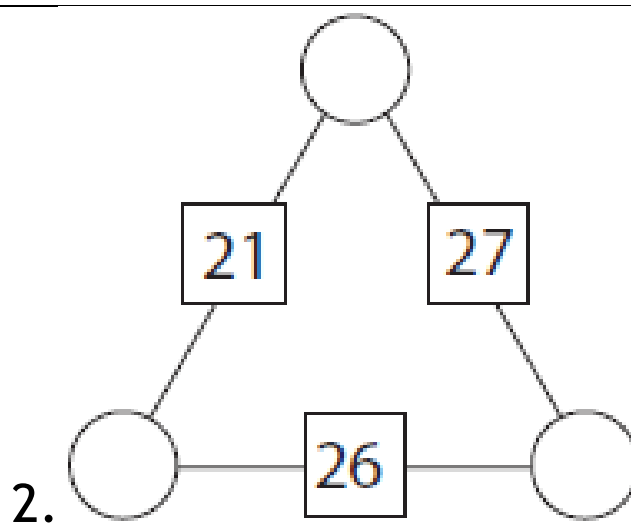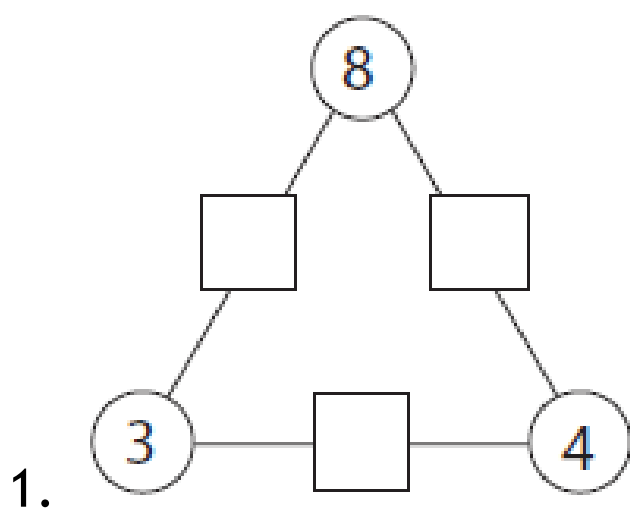
DOTTY SHAPES

Shape 1 is 1cm x 1cm. Find the area of each shape.

Shape 2

Shape 1

Shape 3

Shape 4

Shape 5

Shape 6
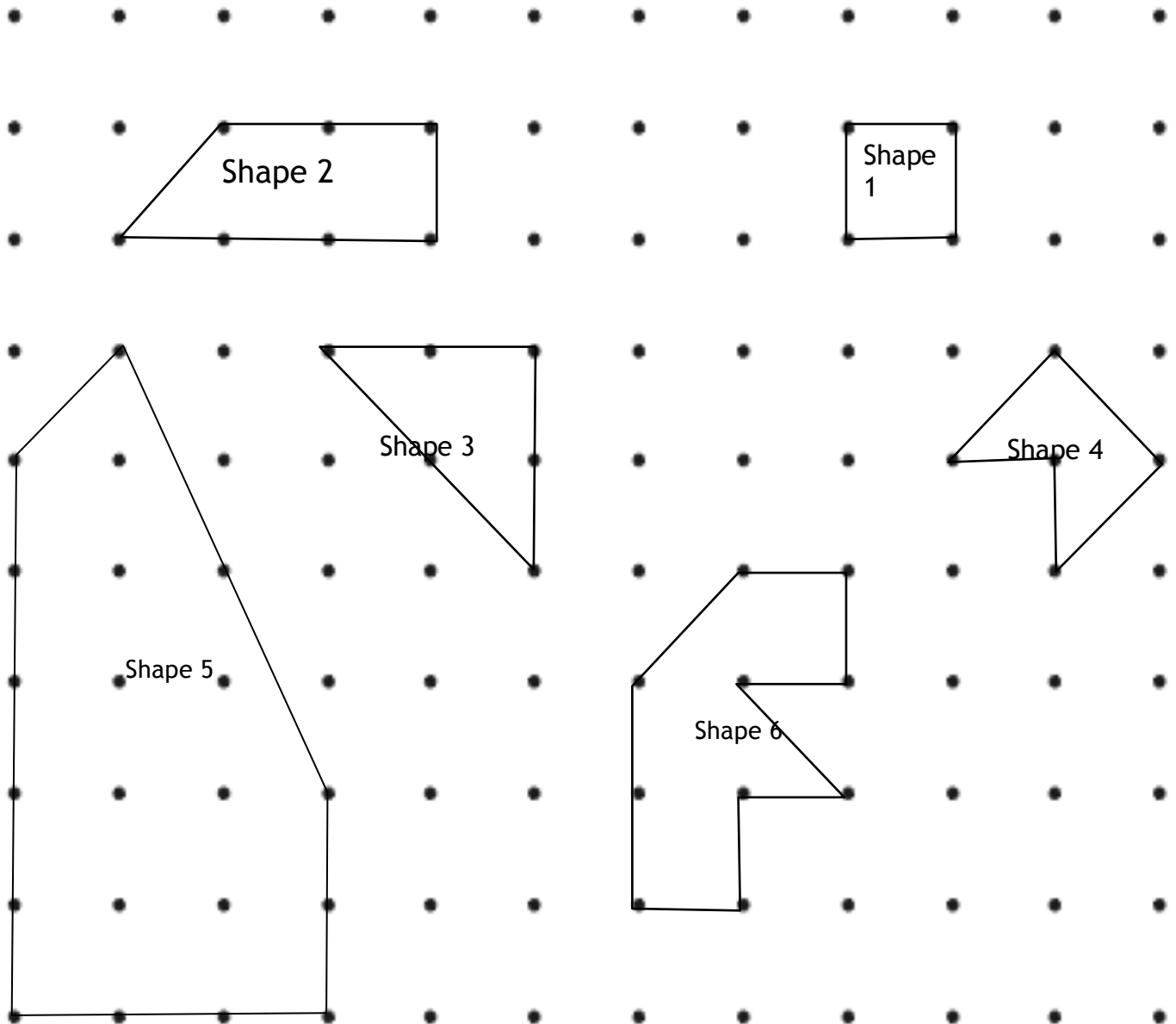
NUMBER CELLS

In this row of cells you start with 3 and 4

3	4			

Then you add 3 and 4 to get 7, then 4 and 7 to get 11 and so on

3	4	7	11	18

But, if you are given only the first and last numbers …

8				52

What are the missing numbers?

NUMBER GRID PUZZLES

Use what you know about a 100 chart to help you fill in the numbers in the WHITE boxes ONLY

	2								
			14						20
				45					
							59		
					77				
81									

FIND THE SHAPE VALUES

The total of each row and column in the square are given

Can you find the value of each shape?

⬤	△	△	☆	16
☆	⬤	⬤	⬤	14
△	⬤	☆	△	16
☆	☆	☆	☆	20
17	15	17	17	

⬤ =

☆ =

△ =

ADDITION AND MATH MAZE

Find your way from top to bottom by following the path of CORRECT answers

Start here

8 +1	6	18	10 + 9	19	18	10 + 7	17	13	10 + 3	13	12	8 +4
9			19			17			10			13
11			11			4			14			3
6 +5	12	9	7 +4	13	3	3 +2	5	16	10 + 3	13	5	5 +1
11			14			5			11			6
8			12			15			11			8
4 +4	8	13	8 +5	15	12	9 +6	14	12	8 +1	7	7	5 +2
10			13			16			9			7
14			11			17			15			10
9 +3	11	12	9 +2	11	15	10 + 5	12	16	8 +6	11	7	5 +5
12			8			15			14			10
16			2			6			12			9
8 +8	16	4	2 +2	5	6	3 +3	9	14	8 +6	16	10	5 +4
16			7			8			13			6
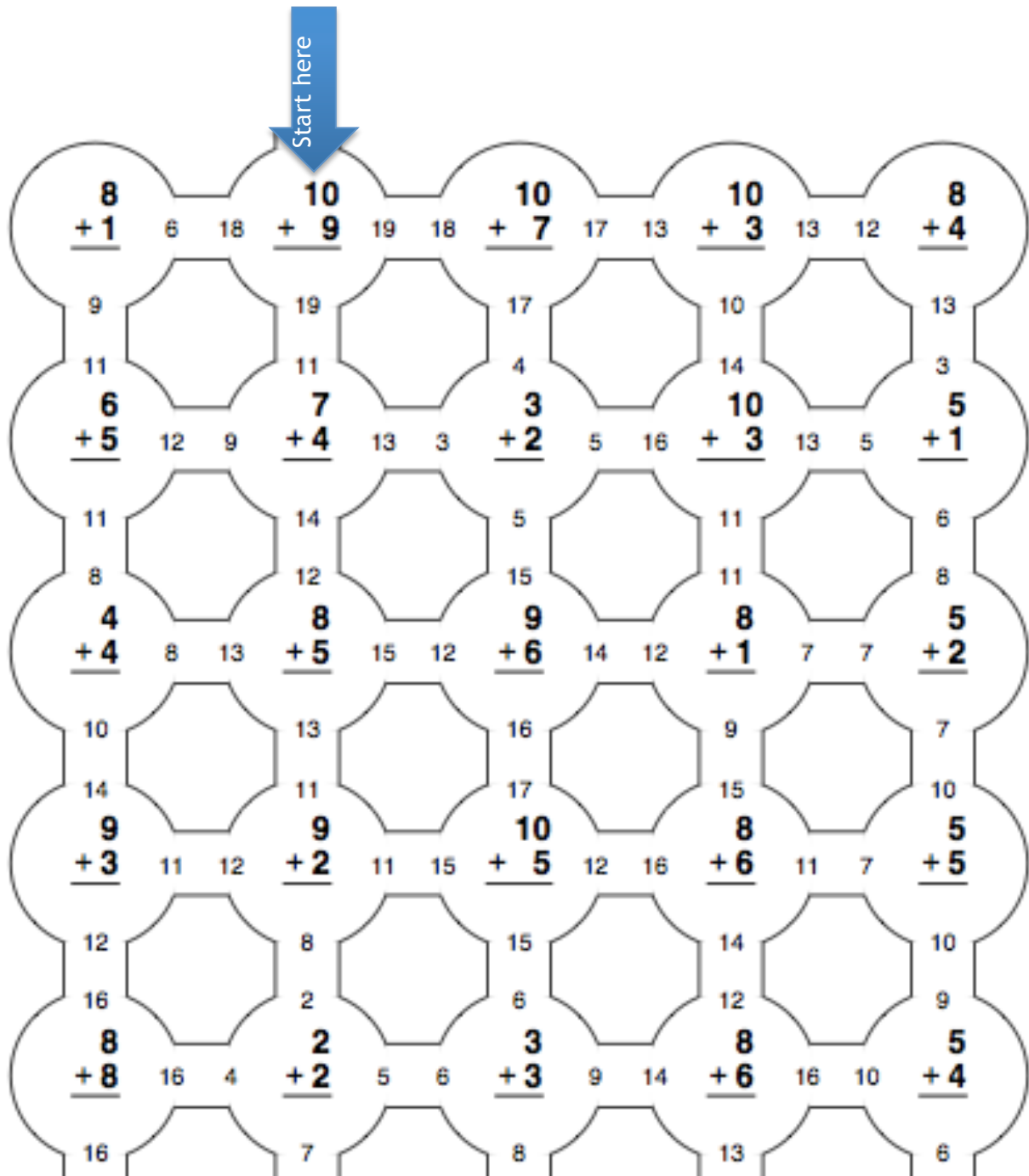
Source: worksheetworks.com

HOW MANY?

How many rectangles in this image
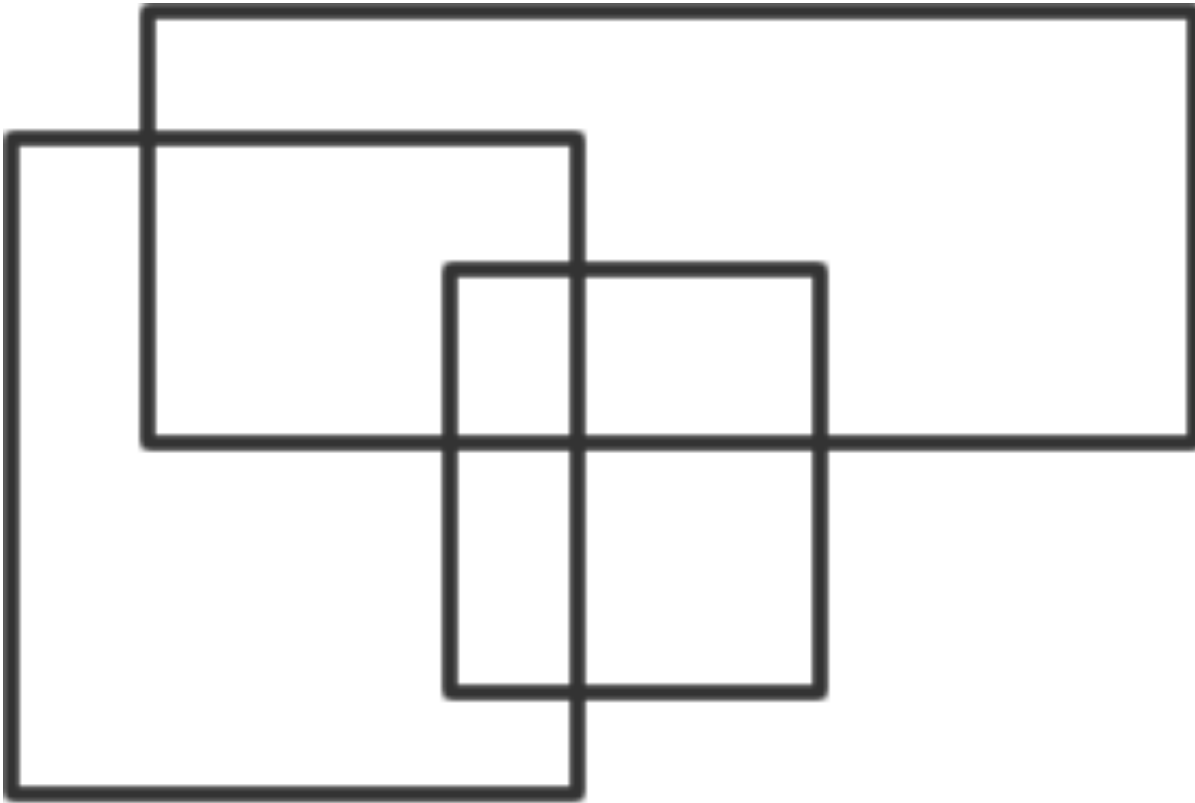
How many triangles in this image

MATHS CROSS-PUZZLE

1	2	3	■	4	5	6
■	7		■	■	8	
9		■	10	11		■
	■	12			■	13
■	14			■	15	
16		■	■	17	■	
18			■	19		■
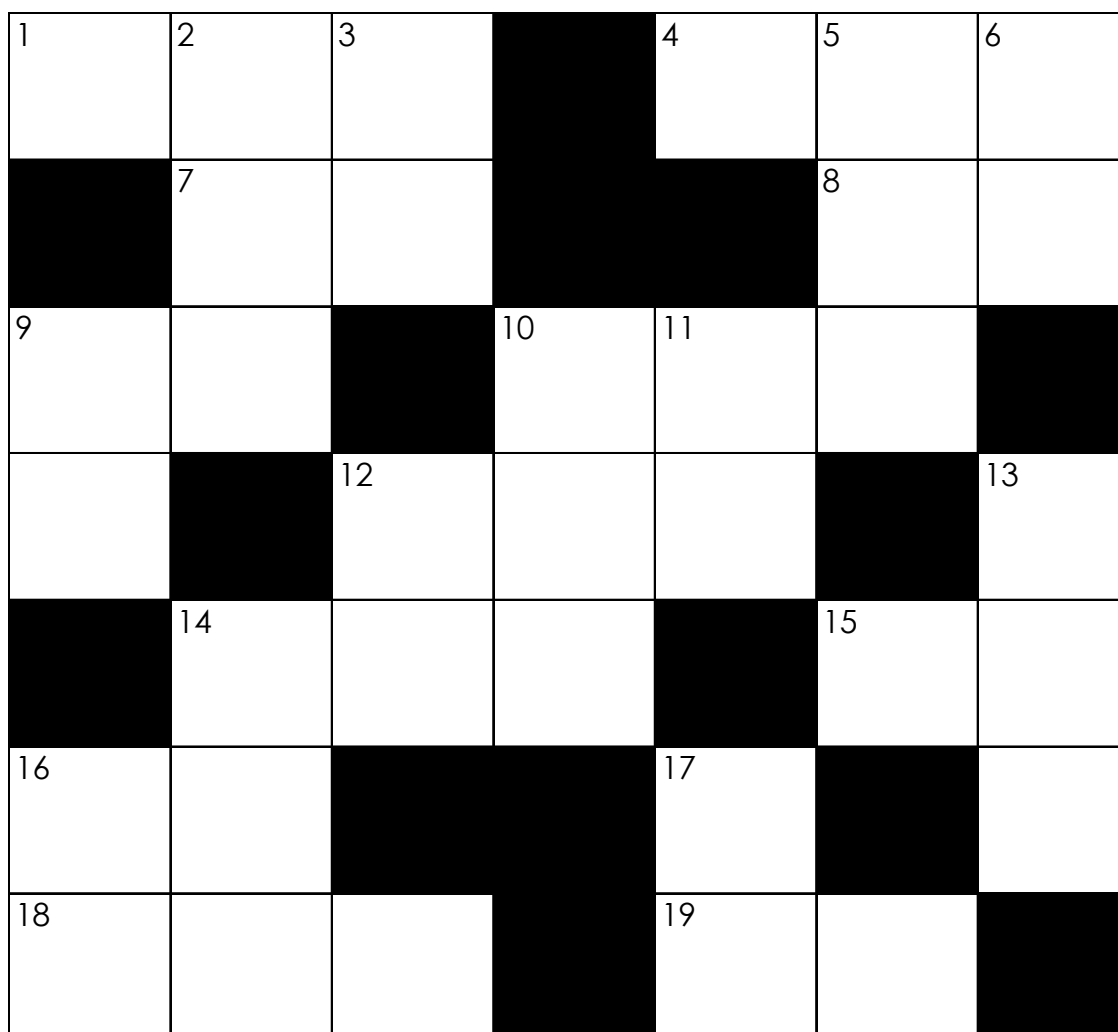
ACROSS

1	150 + 150 + 15
4	Double 80 + 2
7	Add 20 to 44
8	Half of 42
9	22 - 12
10	344 + 100
12	100 + 200 + 20 + 5
14	Take 100 away from 369
15	25 + 25
16	15 + 15 + 15 + 15
18	Double 80 + double 2
19	Double 7

DOWN

2	Add 100 to 60
3	74 - 20
5	Take 10 away from 634
6	30 - 9
9	1 ten and 7 ones
10	Add 10 to 419
11	Double 15; + 10 + 5
12	3 tens and 6 ones
13	Double 200 + double 2
14	Add 10 to 196
16	30 + 31
17	15 + 16

ADDITION SQUARES 1

Find the numbers for the blank spaces. The dark numbers are totals for the rows or columns.

5	5	5		5	**25**
2	8	5	2	8	
	3		3	3	**15**
4	6	2	4	6	
2		2	3	2	**12**
	25	**17**	**17**	**24**	**99**

1

5	1	5		2	**17**
1	9	5	2	8	
	2		8	10	**30**
4	6	4	6	2	
1		9	10	9	**30**
	19	**26**		**31**	**124**

2

HIDDEN SHAPE PUZZLE 1

Find sums adding up to exactly 10. Colour the box. Find the shape.

Hidden Shape Puzzle: look at each box. If the **sum adds up to 10**, colour the box. Find the shape					
3+7	2+2	1+4	6+3	6+2	7+3
3+3	4+6	8+1	1+7	9+1	6+2
4+4	2+2	0+10	6+4	5+3	5+2
4+5	7+4	5+5	10+0	2+2	7+4
8+0	4+6	2+6	6+1	9+1	8+1
2+8	3+5	4+2	1+1	6+2	7+3

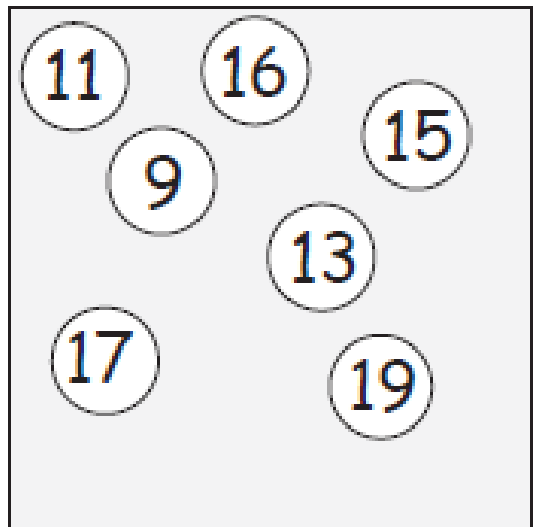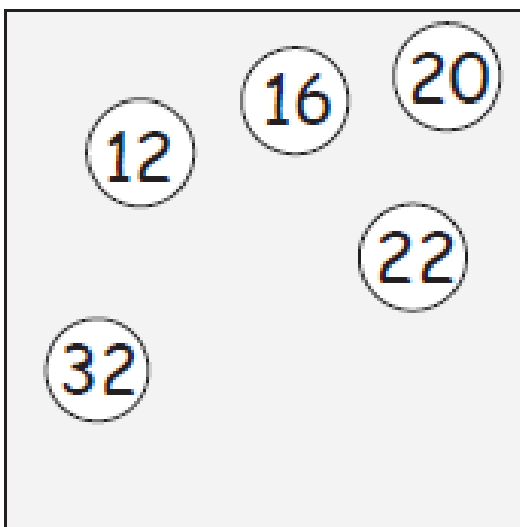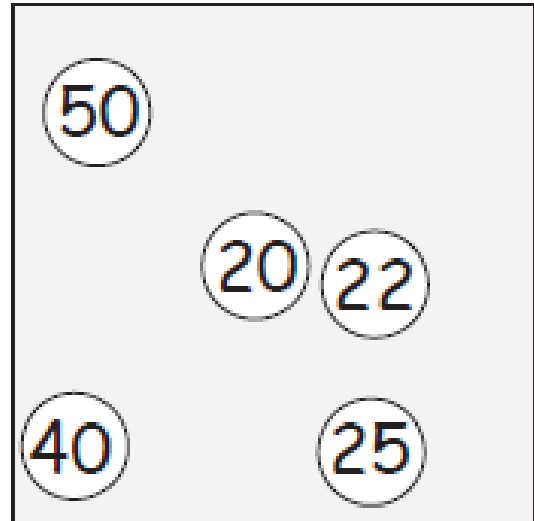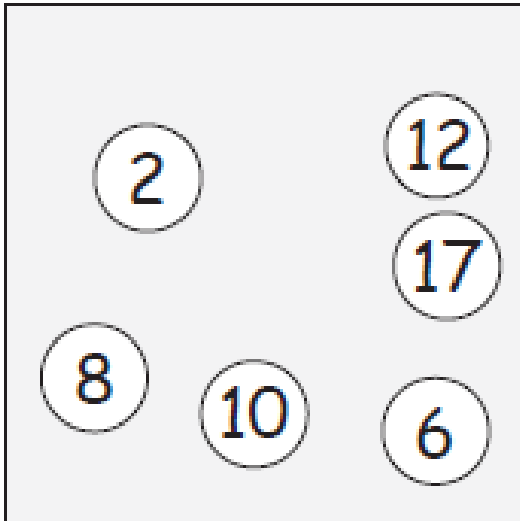South African Numeracy Chair Project (Rhodes University)

HIDDEN SHAPE PUZZLE 2

Find sums adding up to exactly 30. Colour the box. Find the shape.

Hidden Shape Puzzle: look at each box. If the **sum adds up to 30**, colour the box. Find the shape						
17+7	13+15	11+13	15+15	5+21	6+23	15+14
19+3	10+10	10+5+15	12+12	17+13	19+7	21+8
16+11	5+5+20	9+9+2	3+17+4	7+7+7	20+10	6+6+6
8+8+14	2+18+6	19+1+5	8+8+8	12+6	20+5	9+21
25+2	12+12+6	17+3+7	6+14	6+6+6	19+11	19+6
18+4	13+12	2+28	3+3+4	22+8	10+14	9+9+2
7+14	19+10	8+16	14+16	13+4	22+7	9+12

South African Numeracy Chair Project (Rhodes University)

HIDDEN SHAPE PUZZLE 3

Find sums adding up to exactly 100. Colour the box. Find the shape.

| Hidden Shape Puzzle: look at each box. If the **sum adds up to 100**, colour the box. Find the shape						
7+60	13+80	11+40	15+60	21+50	50+20	70+3
19+50	50+50	6+94	75+25	82+18	82+10	21+70
16+40	80+20	75+10	30+50	30+70	75+20	60+13
16+25	70+30	65+20	80+10	50+50	50+40	9+21
25+30	45+55	80+10	30+50	10+90	78+2	52+5
22+55	65+35	90+10	85+15	95+5	10+14	78+5
23+40	10+35	18+20	14+25	13+45	45+12	63+12

South African Numeracy Chair Project (Rhodes University)

WHICH ONE IS DIFFERENT?

In each square, one number has a different pattern to the others. Find the number and colour it in.

Box 1: 2, 12, 17, 8, 10, 6

Box 2: 50, 20, 22, 40, 25

Box 3: 12, 16, 20, 22, 32

Box 4: 11, 16, 9, 15, 13, 17, 19
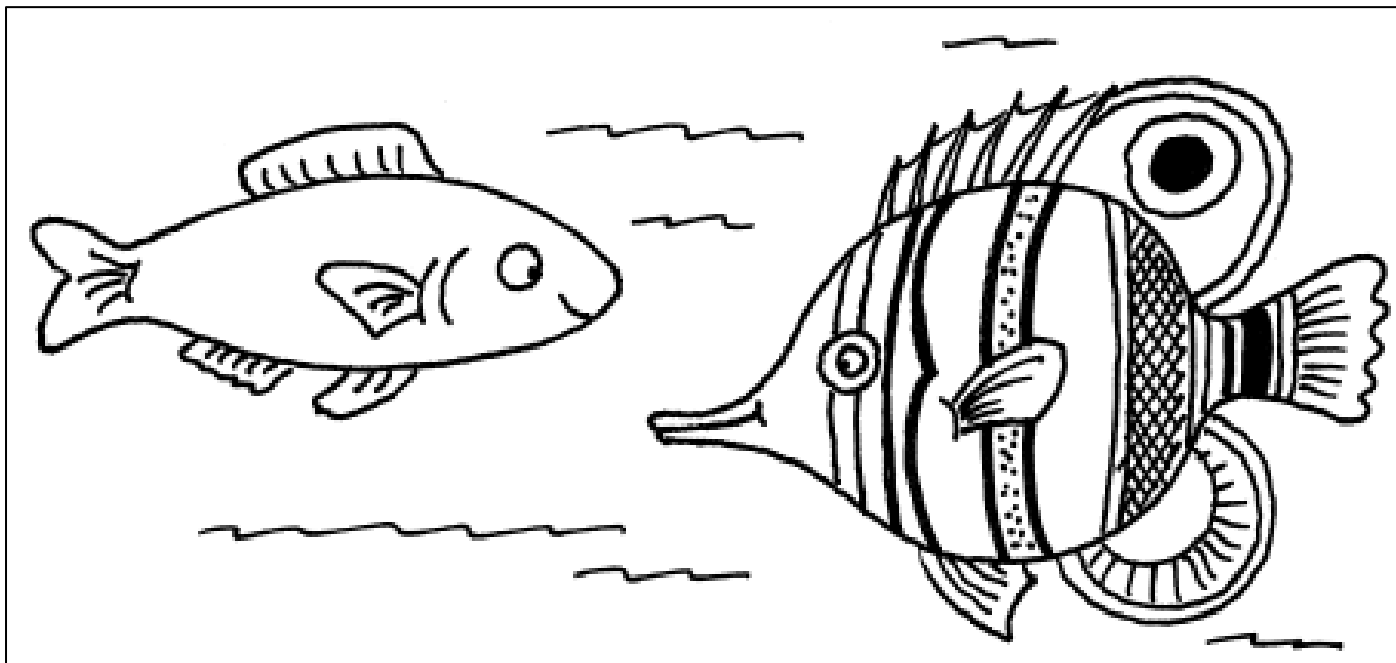
Box 5: 11, 19, 5, 15, 13, 3
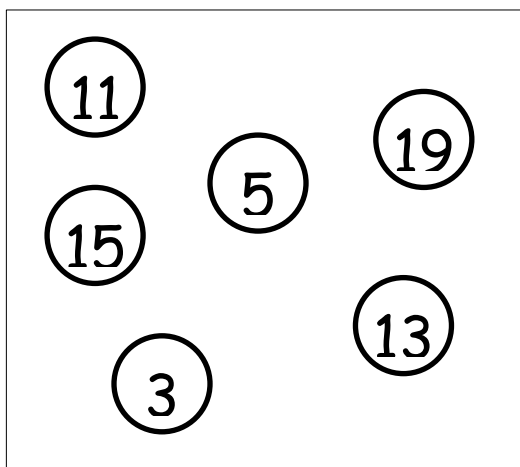
FIELD WORK

How can a farmer divide the unshaded space into 5 fields of the SAME size and shape?
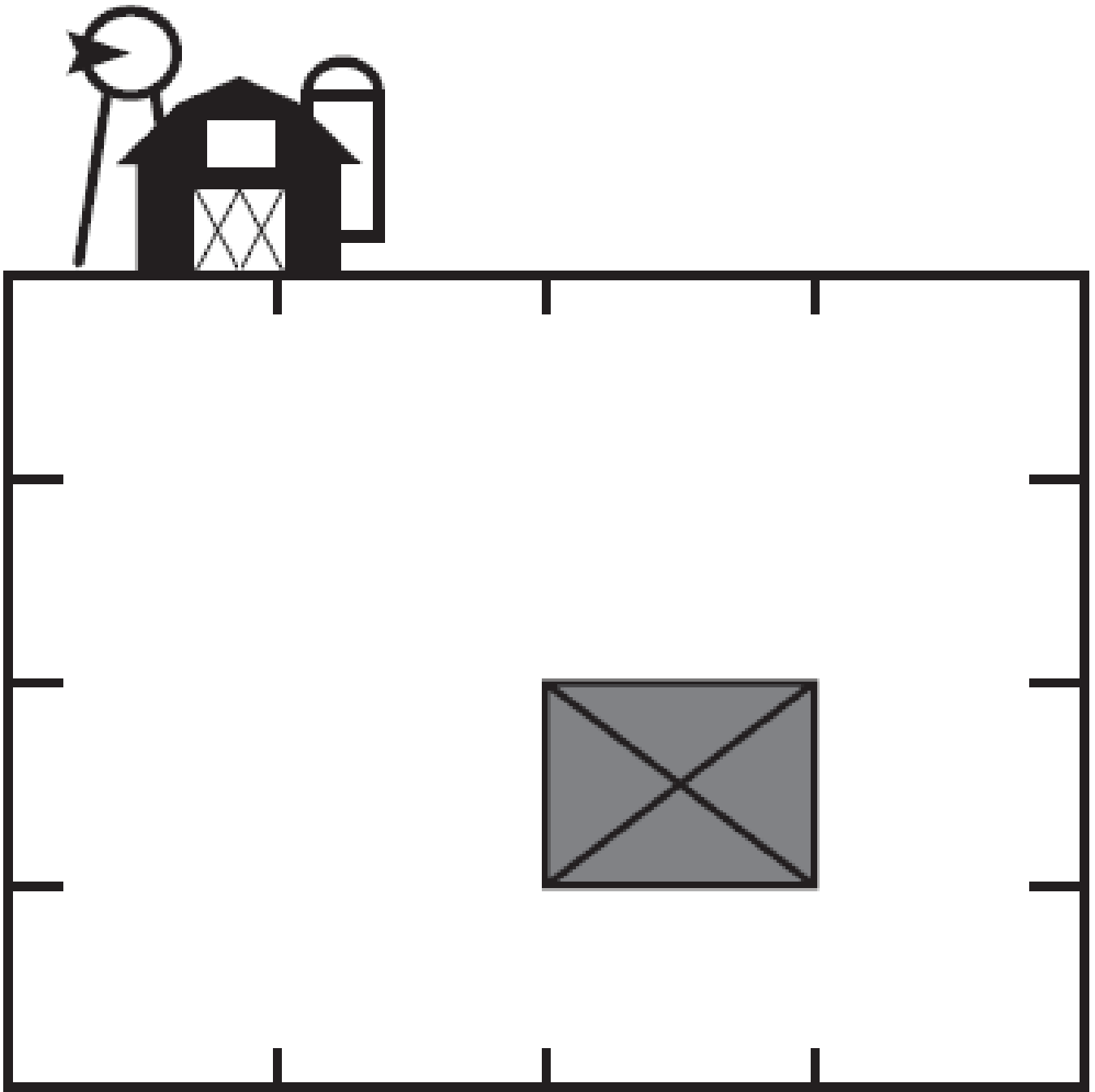
A BIT FISHY

A goldfish costs R1.80

An angel fish costs R1.40

Siya paid exactly R20 for some fish.

How many of each kind did Siya buy?

HOW MANY COOKIES?

Mrs Ngesi made cookies. Some cookies went into rectangular tins and others into round tins.

All the rectangular tins had the same number of cookies.

All the round tins had the same number of cookies.

		= 16 cookies
		= 22 cookies
		= 26 cookies
How many cookies in the	?	
How many cookies in the	?	

SEQUENCING PUZZLES (1 & 2)

SEQUENCING PUZZLES (3 &)

ADDITION SQUARES 2

Add up the numbers in the rows and columns to find totals.

3	+	2	+	3	=
+		+		+	+
3	+	2	+	2	=
+		+		+	+
2	+	5	+	4	=
=		=		=	=
	+		+		=

5	+	4	+	4	=
+		+		+	+
2	+	5	+	4	=
+		+		+	+
3	+	2	+	5	=
=		=		=	=
	+		+		=

BUILD 3D SHAPES

Build a cube

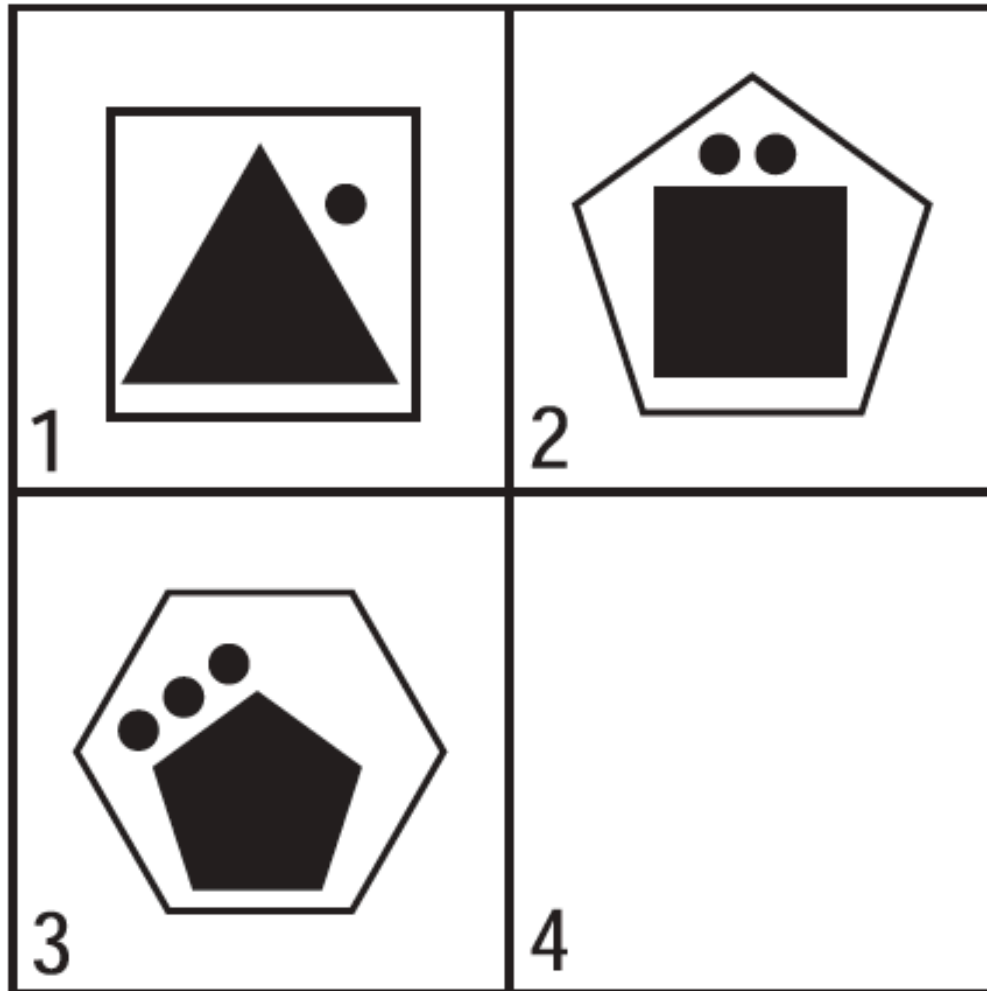### How many faces?

How many edges?

How many vertices?

Now build a roof (pyramid) for your cube (house)

BUILD THE 100 SQUARE 1

Use the puzzle pieces to build a 100 square / chart
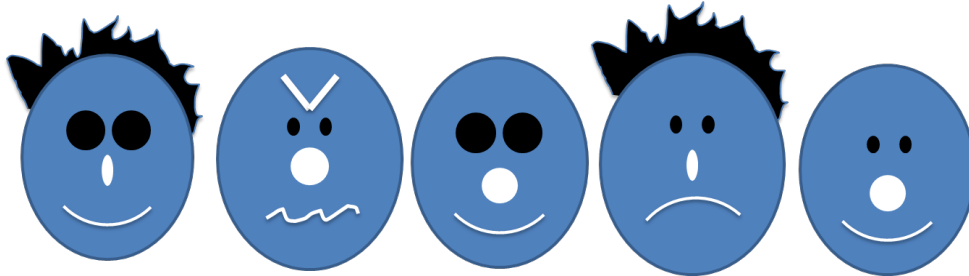
Go Figure

The figure in each square follows a pattern. After you determine the pattern, draw the figure that belongs in the fourth square.

PUZZLES

Give each face a name

These are the faces of **SAM, SINO, SIYA, SACHA and SALLY**.

Use the clues to work out which name goes with each face.

Clues

- **Sally** has hair and big eyes
- **Sam** has hair and is sad
- **Sino** is angry
- **Siya** has a big nose and big eyes
- **Sacha** is smiling and has small eyes

WHAT ARE THE PUPPIES' NAMES?

ROVER, SPOT, JET, REX AND ZEB don't have names. Use the clues and numbers to help give each puppy a name.

3	20	15	11	7

Clues

- **Zeb's** number is even
- **Rex's** number is a single digit number between 5 and 9
- **Rover's** number is a single digit in the 3 times table
- **Spot's** number is not in the 3 or 5 times table
- **Jet's** number is in the 3 and 5 times table

FIND THE MISSING NUMBER

Total = 26
Across and down

		12	
8	10	8	≈26
	10	6	10	≈26
	6	≈26	
	≈26	**EXAMPLE**	

Total = 15
Across and down

2		4	=
	3		2	=
	3	=	
	=		

Total = 22
Across and down

		8	
11	6		=
		11	=
	14	=	
	=		

Total = 48
Across and down

	9			
	14		14	=
		17	=	=
	=	=		

Four-pin bowling

Which pins must Joshua
knock down to score
exactly 5?
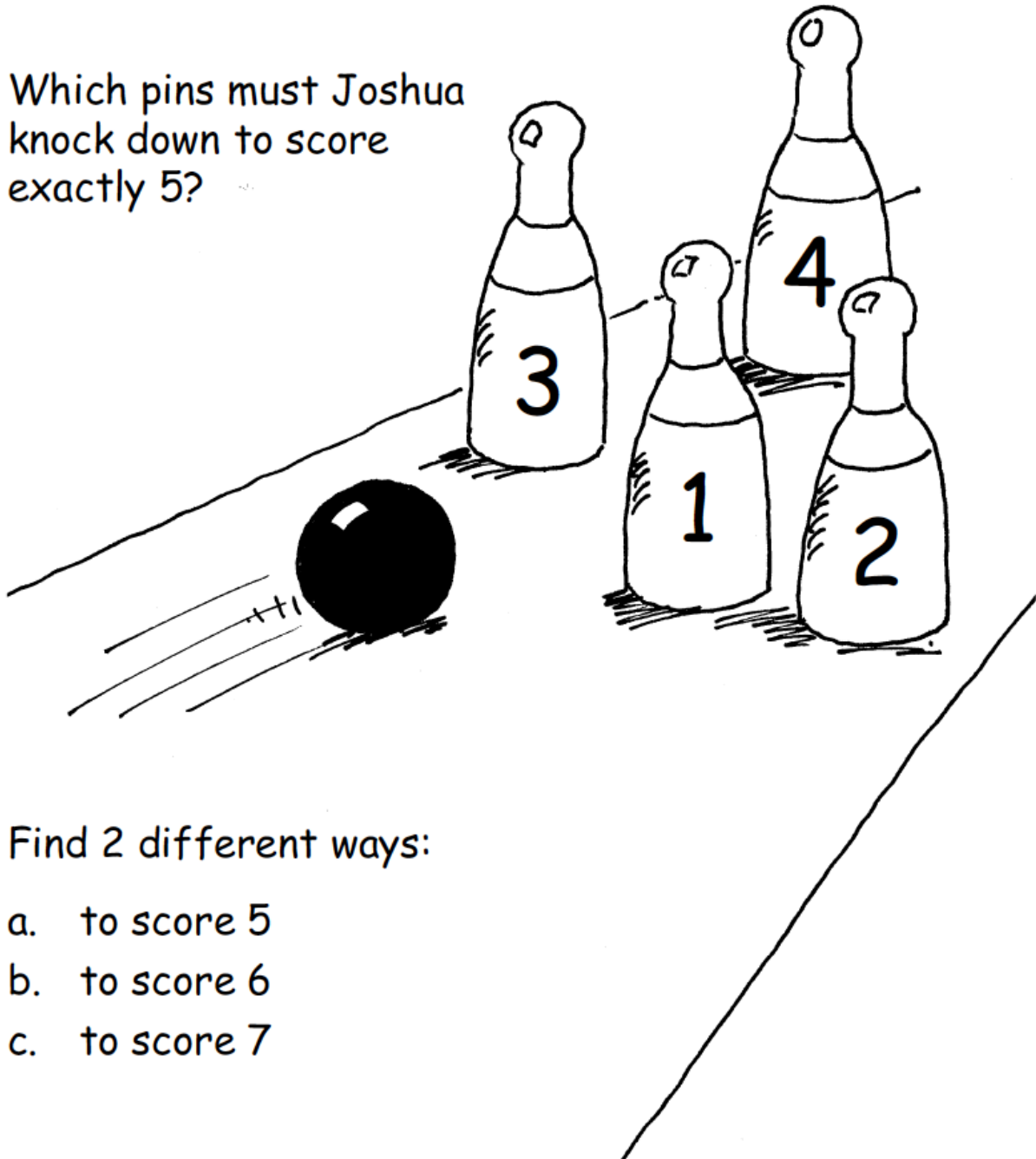
Find 2 different ways:

a.   to score 5
b.   to score 6
c.   to score 7

WHAT COLOUR IS EACH SHAPE?
Read the clues and then write the colours on the shape
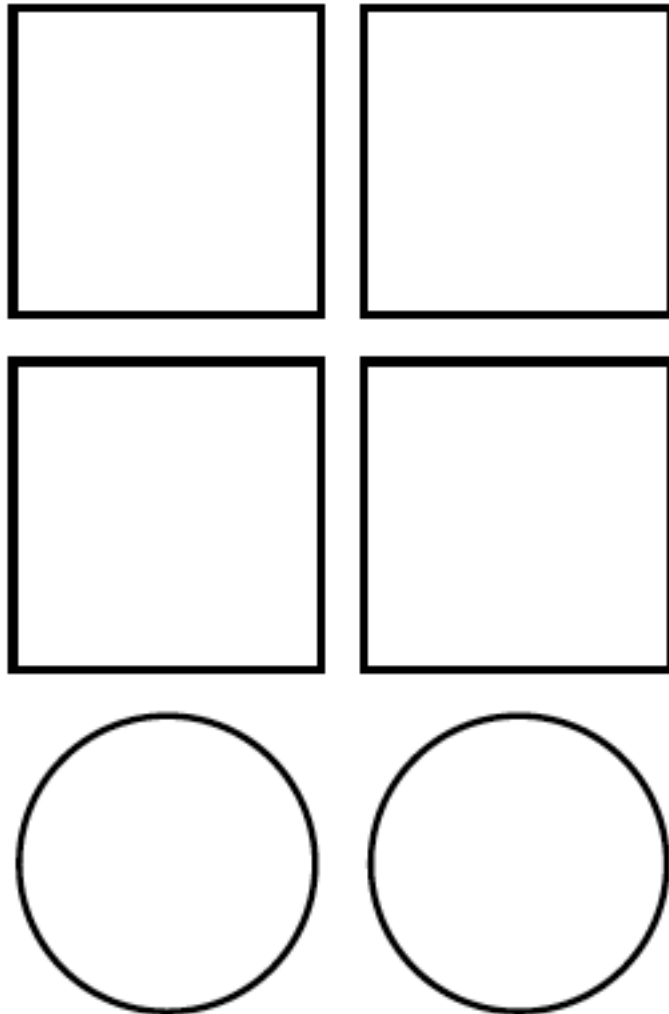
Clues
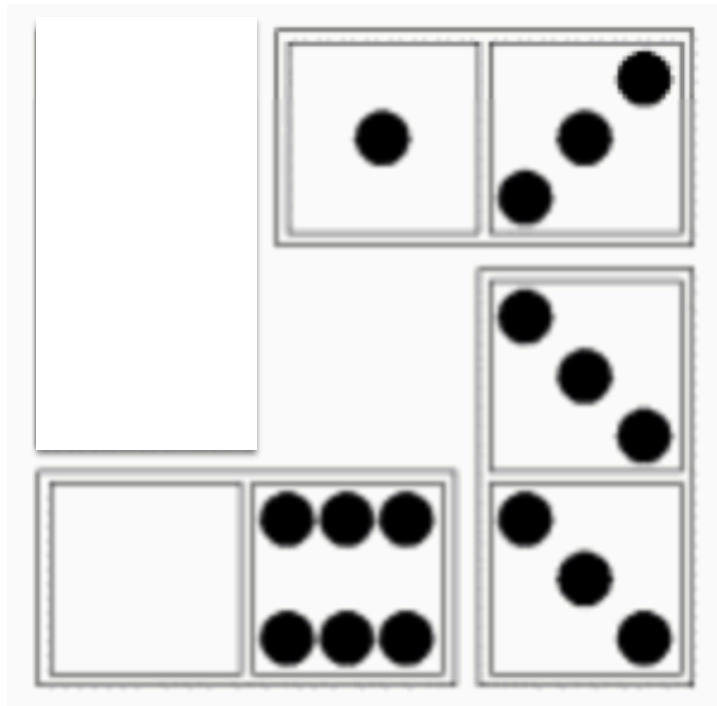**RED is not next to GREY**
BLUE is between WHITE and GREY
GREEN is not a square
BLUE is on the right of PINK
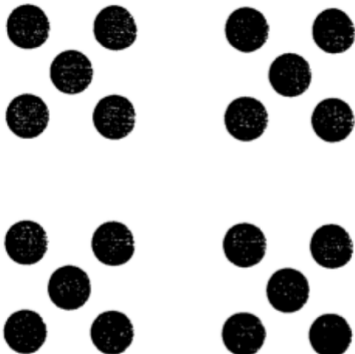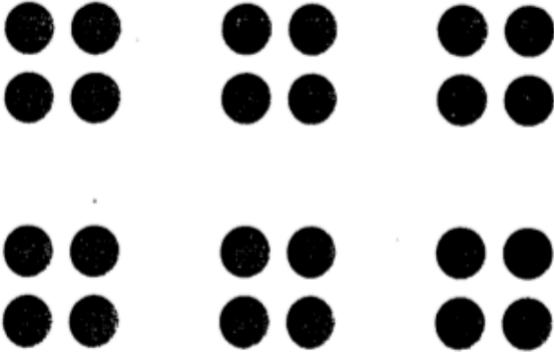
DOMINO WINDOWS
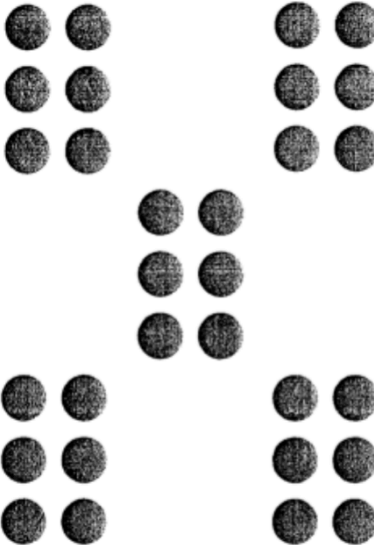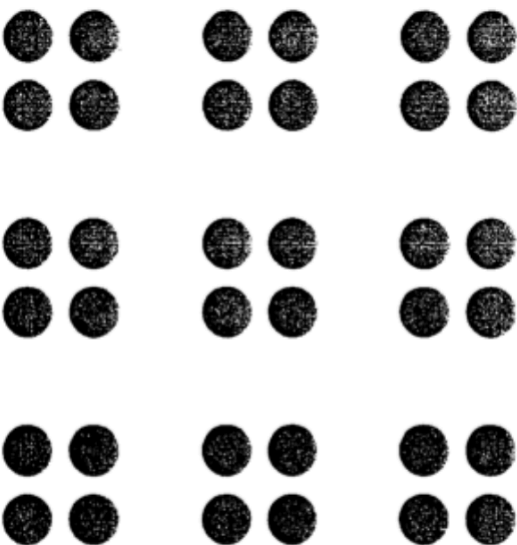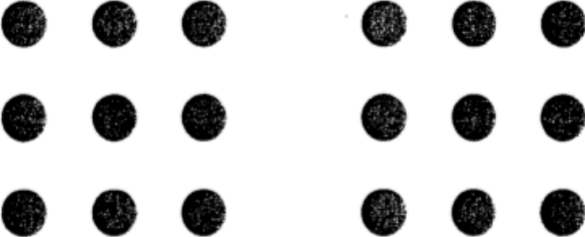
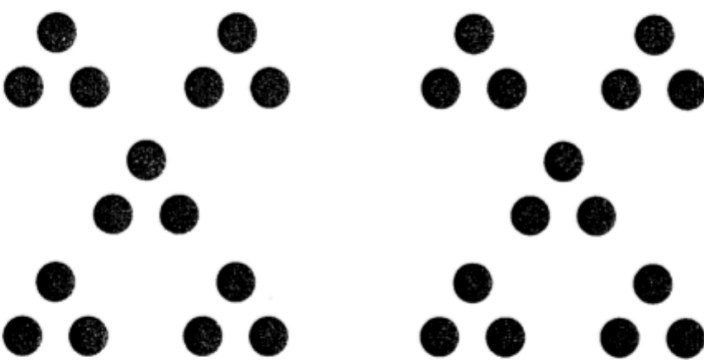## Can you make other windows like this?

In this example the spots on each side total 9. Can you find the missing piece?

Now try another one that adds to 9

Can you make other windows like this?
Try adding to 10, 12, 13, 15

HOW MANY DOTS?

BUILD THE NUMBER
How quickly can you build 50 with the unifix blocks?

What about 100?

What about 200?