

## LESSON 1

### B2, L13 Trapezium and kite



1 Open

2 Open



1 Shape A – parallelogram

Shape B – kite

Shape C – rectangle

Shape D – kite

Shape E – rectangle

Shape F – trapezium

Shape G – trapezium

Shape H – rhombus

Shape I – kite

Shape J – trapezium

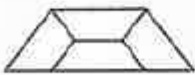
Shape K – square

Shape L – parallelogram

2 a F, G, J    b B, D, I    c B, D, G, I



1



2



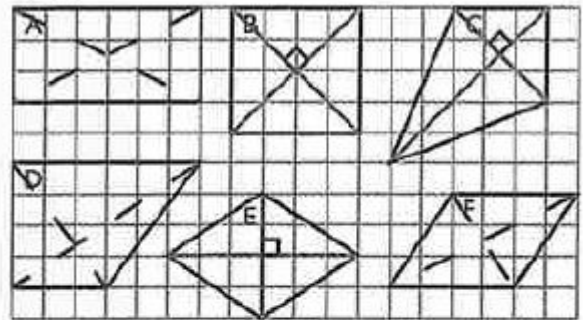
3 The area of the second diagram is  $2\frac{1}{4}$  times the area of the first.

## LESSON 2

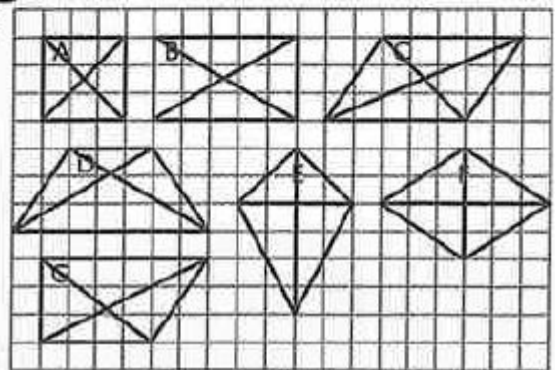
### B2, L14 Investigating diagonals



1, 2, 3 and 4



2



3

Property	Quadrilateral						
	A	B	C	D	E	F	G
4 sides equal	✓	✗	✗	✗	✗	✓	✗
4 angles equal	✓	✓	✗	✗	✗	✗	✗
diagonals same length	✓	✓	✗	✓	✗	✗	✗
diagonals cut each other in half	✓	✓	✓	✗	✗	✓	✗
diagonals intersect at right angles	✓	✗	✗	✗	✓	✓	✗
a diagonal an axis of symmetry	✓	✗	✗	✗	✓	✓	✗



- The statement is true.
- The intersection is at the mid-point of each diagonal.
- The diagonals of rectangles and parallelograms are similar in that the diagonals cut each other in half. However, they are different in that the diagonals of rectangles are equal but this is not true of parallelograms.

## LESSON 3

### B2, L15 Classifying quadrilaterals and triangles



- 2 a kite                      b trapezium  
 c parallelogram        d kite



1-5 Open

6

Property	parallelogram	kite	trapezium
opposite angles equal	2	1	0
one or two right angles	0	1	1 or 2
one pair of parallel sides	0	0	1
two pairs of parallel sides	2	0	0
perpendicular sides	0	1	1



- 1 9 triangles  
 2 7 isosceles, 2 scalene  
 3 7 different sizes

## LESSON 4

### Lesson 81 Vertically opposite angles

- 1  $\angle a, \angle b = 55^\circ$        $\angle c, \angle d = 140^\circ$   
 $\angle e, \angle f = 30^\circ$        $\angle g, \angle i = 85^\circ$   
 $\angle h, \angle j = 95^\circ$
- 2  $\angle a = 30^\circ$                $\angle b = 150^\circ$   
 $\angle c = 30^\circ$                $\angle d = 35^\circ$   
 $\angle e = 90^\circ$                $\angle f = 55^\circ$   
 $\angle g = 35^\circ$

3

$\angle a$	$\angle b$	$\angle c$	$\angle d$	Total
$60^\circ$	$120^\circ$	$60^\circ$	$120^\circ$	$360^\circ$
$55^\circ$	$125^\circ$	$55^\circ$	$125^\circ$	$360^\circ$
$48^\circ$	$132^\circ$	$48^\circ$	$132^\circ$	$360^\circ$
$x^\circ$	$180^\circ - x^\circ$	$x^\circ$	$180^\circ - x^\circ$	$360^\circ$

- 4  $\angle a = 65^\circ$                $\angle b = 115^\circ$   
 $\angle c = 65^\circ$                $\angle d = 57.5^\circ$   
 $\angle e = 32.5^\circ$                $\angle f = 32.5^\circ$

### Lesson 82 Reasoning about lines and angles

- 1  $\angle A = 50^\circ$               2  $\angle K = 75^\circ$   
 $\angle C = 65^\circ$                $\angle L = 80^\circ$   
 $\angle E = 70^\circ$                $\angle M = 25^\circ$   
 $\angle F = 70^\circ$                $\angle R = 30^\circ$   
 $\angle P = 35^\circ$                $\angle S = 75^\circ$   
 $\angle Q = 110^\circ$                $\angle T = 75^\circ$   
 $\angle R = 35^\circ$

3 The 4 angles add to 4 right angles or  $360^\circ$ .

- 4 a  $\angle a = 52^\circ$   
 $\angle b = 76^\circ$   
 $\angle c = 76^\circ$
- b  $\angle d = 45^\circ$   
 $\angle e = 45^\circ$   
 $\angle f = 45^\circ$   
 $\angle g = 135^\circ$
- c  $\angle h = 70^\circ$   
 $\angle i = 110^\circ$   
 $\angle j = 110^\circ$