



GRADE 9

INVESTIGATION ANGLES PAIRS ON PARALLEL LINES

- 1.1 In the following five diagrams, l and m are two lines. The other labels refer to angles. In each diagram measure the angles marked and answer the related questions in the table below.

a.	b.	c.
d.	e.	

[20]

1.2 Complete the table.

Diagram	Are the lines l and m parallel?	Are the corresponding angles a and e equal?	Are the alternate angles c and f equal?	Are the co-interior angles d and f equal? If not, are they supplementary?	
				Equal	Supplementary
a					
b					
c					
d					
e					

[20]

1.3 From the investigation you should have discovered some important facts about special angles pairs.

When parallel lines are cut by a transversal :		
1.3.1	Corresponding angles	
1.3.2	Alternate angles	
1.3.3	Co-interior angles	
1.3.4	Vertically opposite angles	

(1)

(1)

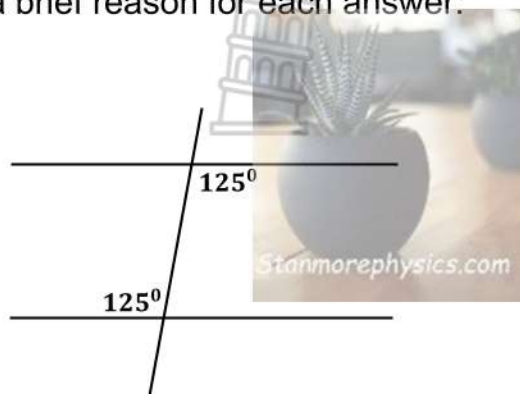
(2)

(1)

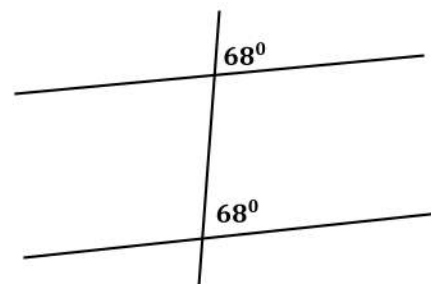
[5]

- 1.4 The following figures are not drawn to scale. Does each figure contain a pair of parallel lines? Give a brief reason for each answer.

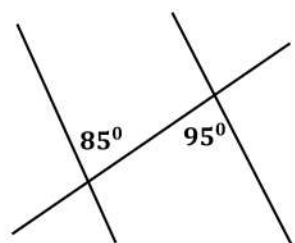
1.4.1



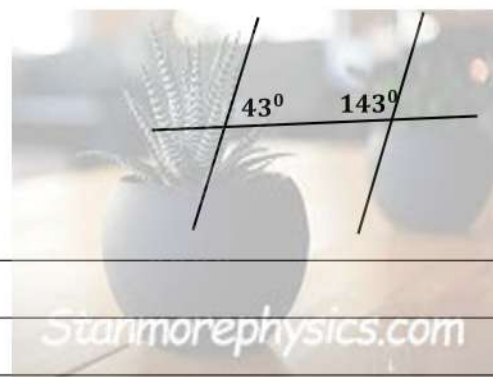
1.4.2



1.4.3



1.4.4



(1)

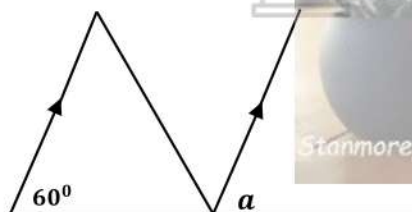
(1)

(1)

[4]

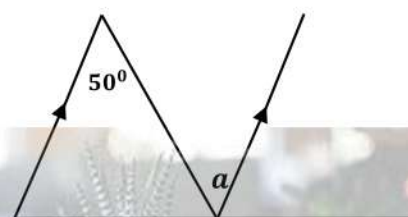
1.5 Find the value of the unknown, giving a brief reason for your answer:

1.5.1



Statement	Reason

1.5.2

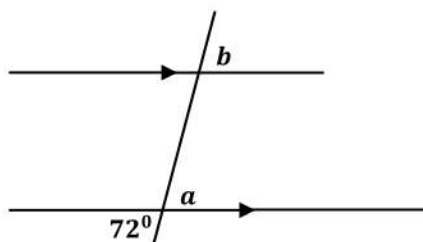


Statement	Reason

(2)

(2)

1.5.3



Statement	Reason

(4)

1.5.4



Statement	Reason

(3)

[11]

TOTAL:

60



GRADE 9

INVESTIGATION MEMOR ANGLES PAIRS ON PARALLEL LINES

- 1.1 In the following five diagrams, l and m are two lines. The other labels refer to angles. In each diagram measure the angles marked and answer the related questions in the table below.

a.	b.	c.
d.	e.	

[20]

1.2 Complete the table.

Diagram	Are the lines l and m parallel?	Are the corresponding angles a and e equal?	Are the alternate angles c and f equal?	Are the co-interior angles d and f equal? If not, are they supplementary?	
				Equal	Supplementary
a	Yes	Yes✓	Yes	Yes✓	$110^0 + 70^0 = 180^0$ ✓✓
b	No	No✓	No	No✓	$37^0 + 125^0 \neq 180^0$ ✓✓
c	Yes	Yes✓	Yes	Yes✓	$64^0 + 116^0 = 180^0$ ✓✓
d	Yes	Yes✓	Yes	Yes✓	$84^0 + 96^0 = 180^0$ ✓✓
e	No	No✓	No	No✓	$84^0 + 113^0 \neq 180^0$ ✓✓

[20]

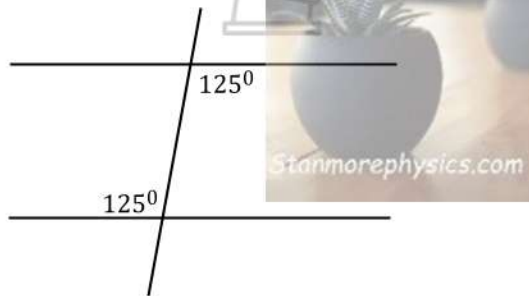
1.3 From the investigation you should have discovered some important facts about special angles pairs.

When parallel lines are cut by a transversal :		
1.3.1	Corresponding angles	Equal✓
1.3.2	Alternate angles	Equal✓
1.3.3	Co-interior angles	Add up to 180^0 or are supplementary✓✓
1.3.4	Vertically opposite angles	Equal✓

[5]

1.4 The following figures are not drawn to scale. Does each figure contain a pair of parallel lines? Give a brief reason for each answer.

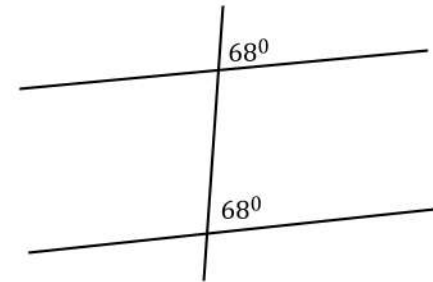
1.4.1



Yes

Alternate angles are equal ✓

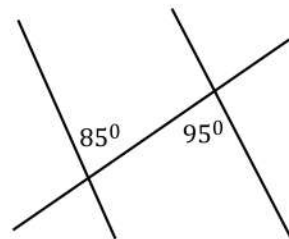
1.4.2



Yes

Corresponding angles are equal ✓

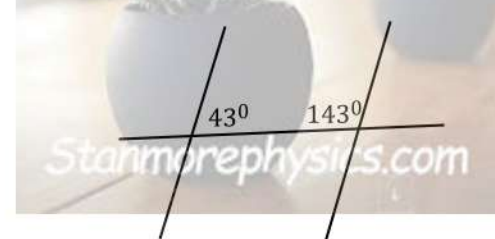
1.4.3



No

Alternate angles are NOT equal ✓

1.4.4



No

Co-interior angles are NOT supplementary/ NOT add up to 180° ✓

(1)

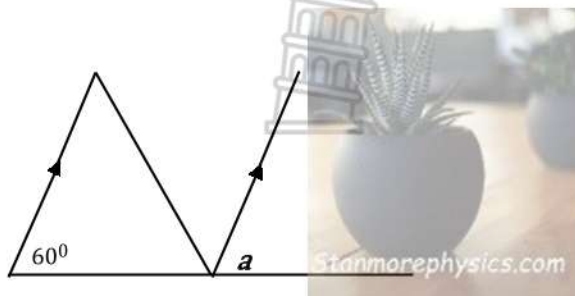
(1)

(1)

[4]

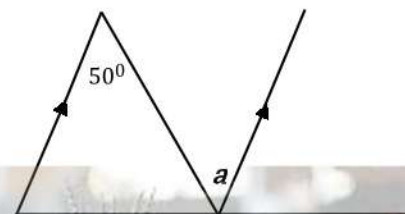
1.5 Find the value of the unknown, giving a brief reason for your answer:

1.5.1



Statement	Reason
$a = 60^\circ$ ✓	Corr. $\angle$ s, $\parallel$ lines ✓

1.5.2

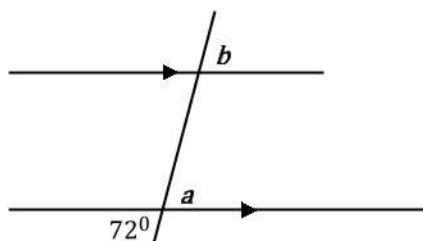


Statement	Reason
$a = 50^\circ$ ✓	Alt $\angle$ s, $\parallel$ lines ✓

(2)

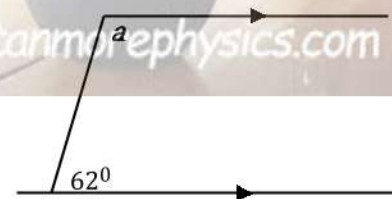
(2)

1.5.3



Statement	Reason
$a = 72^\circ$ ✓	Vert. opp. angles ✓
$b = a = 72^\circ$ ✓	Corr $\angle$ s, $\parallel$ lines ✓

1.5.4



Statement	Reason
$a = 180^\circ - 62^\circ$ ✓	Co-int $\angle$ s, $\parallel$ lines ✓
$= 118^\circ$ ✓	

(4)

(3)

[11]

TOTAL:

60

RUBRIC

1.1 Measurement of angles

Diagram	1 marks	2 marks	3 marks	4 marks	Total marks
<i>a</i>	1 - 2 angles correctly measured	2 - 3 angles correctly measured	3 - 4 angles correctly measured	4 - 5 angles correctly measured	
<i>b</i>	1 - 2 angles correctly measured	2 - 3 angles correctly measured	3 - 4 angles correctly measured	4 - 5 angles correctly measured	
<i>c</i>	1 - 2 angles correctly measured	2 - 3 angles correctly measured	3 - 4 angles correctly measured	4 - 5 angles correctly measured	
<i>d</i>	1 - 2 angles correctly measured	2 - 3 angles correctly measured	3 - 4 angles correctly measured	4 - 5 angles correctly measured	
<i>e</i>	1 - 2 angles correctly measured	2 - 3 angles correctly measured	3 - 4 angles correctly measured	4 - 5 angles correctly measured	
				Total Marks	