

7:04 | Finding the Size of an Angle

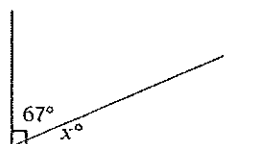
Name: _____

Class: _____

Examples

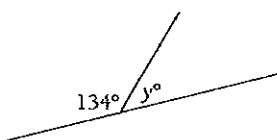
Find the value of each pronumeral.

1 A right angle = 90° .



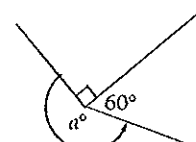
$$\begin{aligned} x &= 90 - 67 \\ &= 23 \end{aligned}$$

2 A straight angle = 180° .



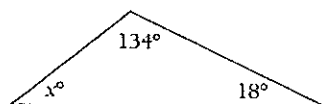
$$\begin{aligned} y &= 180 - 134 \\ &= 46 \end{aligned}$$

3 A revolution = 360° .



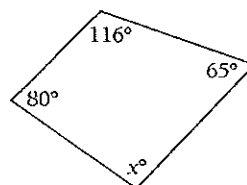
$$\begin{aligned} a &= 360 - 90 - 60 \\ &= 210 \end{aligned}$$

4 The angle sum of a triangle is 180° .



$$\begin{aligned} x &= 180 - 134 - 18 \\ &= 28 \end{aligned}$$

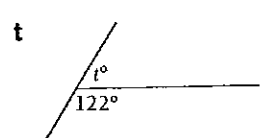
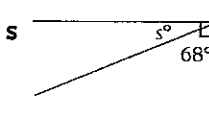
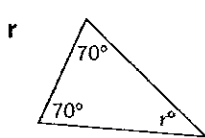
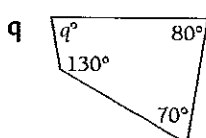
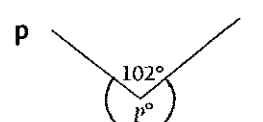
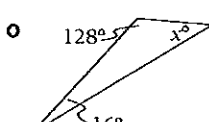
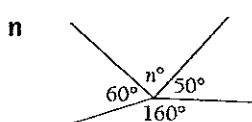
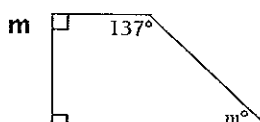
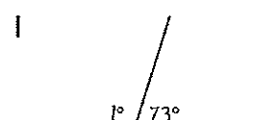
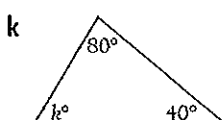
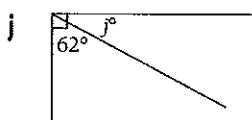
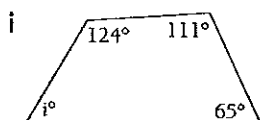
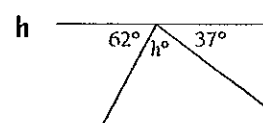
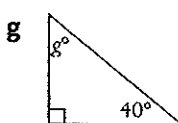
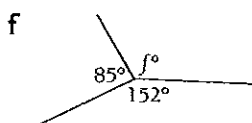
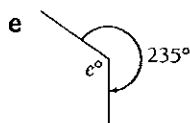
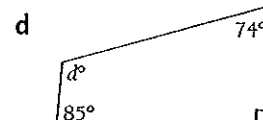
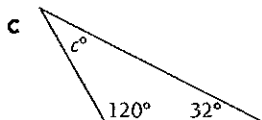
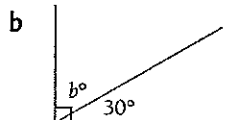
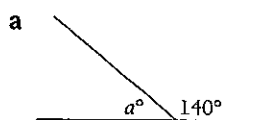
5 The angles in a quadrilateral total 360° .



$$\begin{aligned} x &= 360 - 80 - 116 - 65 \\ &= 99 \end{aligned}$$

Exercise

Find the value of each pronumeral.



Topic test 2

Angles

- Time allowed: 45 minutes. A protractor is required.
- Part A: 20 multiple-choice questions (40 marks)
- Part B: 15 free-response questions (60 marks)

Name: _____

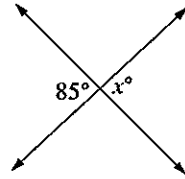
Part A

20 multiple-choice questions
2 marks each: 40 marks

Circle the correct answer each time.

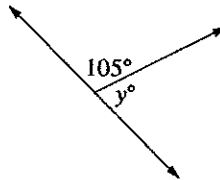
1 $x^\circ = ?$

- A 5° B 105°
C 85° D 95°



2 $y^\circ = ?$

- A 75° B 105°
C 85° D 15°

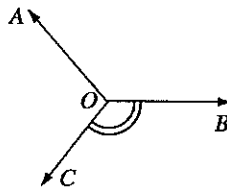


3 Vertically opposite angles are:

- A equal B supplementary
C complementary D corresponding

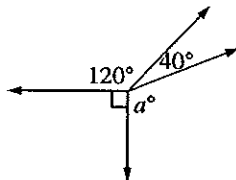
4 The marked angle is:

- A $\angle OCB$ B $\angle AOC$
C $\angle AOB$ D $\angle BOC$



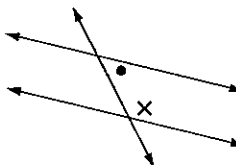
5 $a^\circ = ?$

- A 110° B 120°
C 140° D 200°

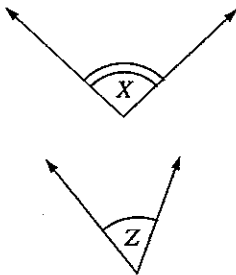
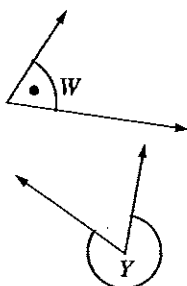


6 The marked angles are:

- A alternate
B corresponding
C complementary
D co-interior



7

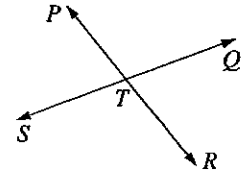


If these angles were listed from smallest to largest, the order would be:

- A YZXW B YXZW C ZWXY D ZXWY

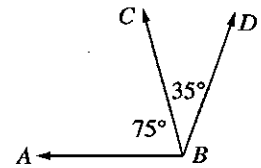
8 Which angle is vertically opposite $\angle PTS$?

- A $\angle QTP$ B $\angle STP$
C $\angle RTS$ D $\angle QTR$



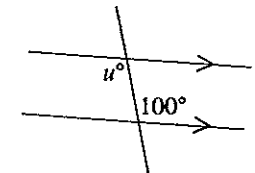
9 $\angle ABD = ?$

- A 110° B 40°
C 35° D 15°



10 $u^\circ = ?$

- A 50° B 140°
C 80° D 100°

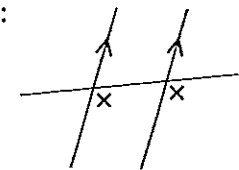


11 Co-interior angles in parallel lines are:

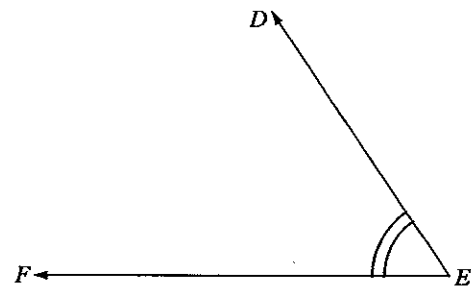
- A complementary B equal
C supplementary D vertically opposite

12 The angles marked x are:

- A alternate
B complementary
C co-interior
D corresponding



13

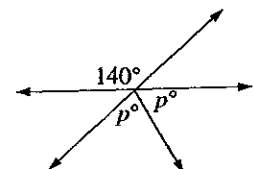


The size of $\angle DEF$ is:

- A 116° B 56° C 64° D 124°

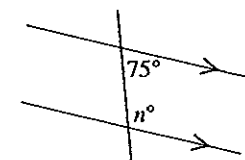
14 $p^\circ = ?$

- A 70° B 20°
C 140° D 40°



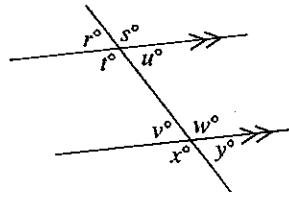
15 $n^\circ = ?$

- A 75° B 95°
C 105° D 150°



Topic test 2: Angles continued

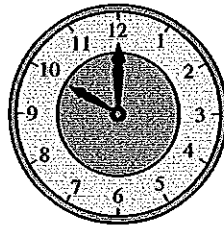
- 16 Which angle is co-interior to u° ?
 A r° B y°
 C w° D v°



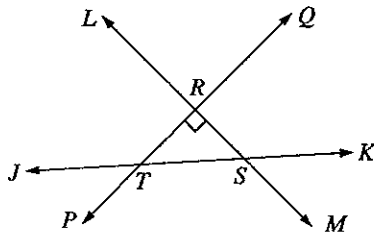
- 17 Which angle is complementary to 80° ?
 A 10° B 90° C 100° D 180°

- 18 Which of these statements is true?
 A An acute angle is 90° .
 B A straight angle is the size of two right angles.
 C A revolution is between 270° and 360° .
 D An obtuse angle is between 180° and 270° .

- 19 What is the size of the acute angle between the hands of a clock at 10 o'clock?
 A 60° B 20°
 C 30° D 80°



20

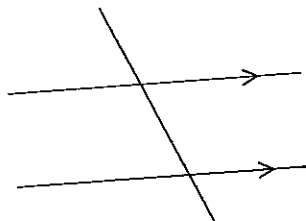


- Which one of these statements is false?
 A $LM \perp PQ$
 B JK intersects PQ at R
 C $\angle QRM$ and $\angle PRM$ are equal
 D $\angle RSK$ and $\angle TSM$ are vertically opposite

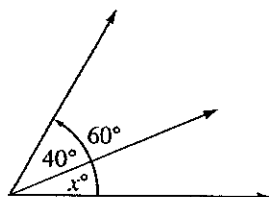
Part B

15 free-response questions
 2 marks each unless otherwise specified:
 60 marks
 Show your working where appropriate.

- 21 Mark a pair of alternate angles.

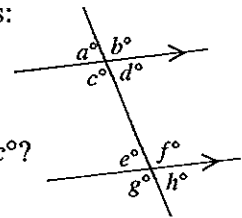


- 22 Find x° .

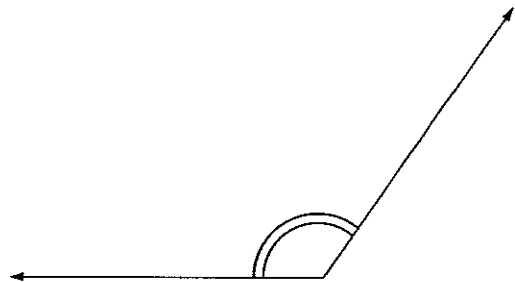


- 23 Draw a right angle and label it $\angle PQR$. Include the right angle symbol on your diagram.

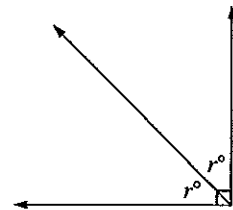
- 24 (8 marks) Which angle is:
 a co-interior to c° ?
 b alternate to c° ?
 c vertically opposite to c° ?
 d corresponding to c° ?



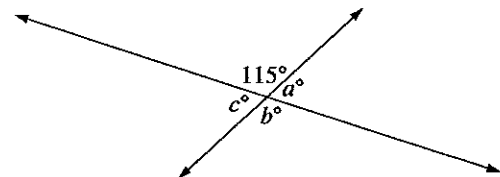
- 25 Measure the size of the marked angle.



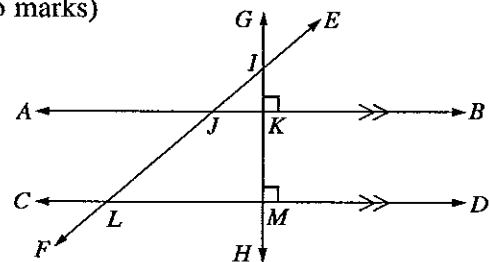
- 26 Find r° .



- 27 (3 marks) Find a° , b° and c° .



- 28 (5 marks)

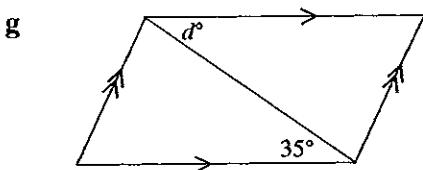
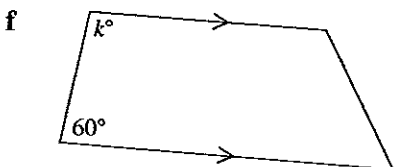
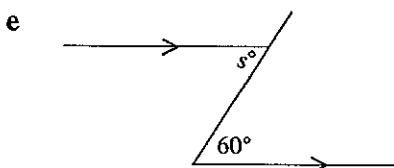
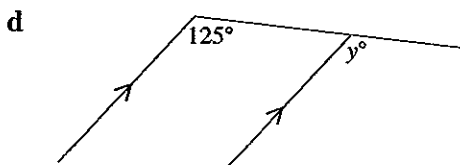
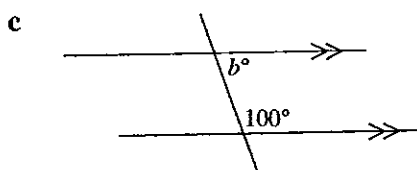
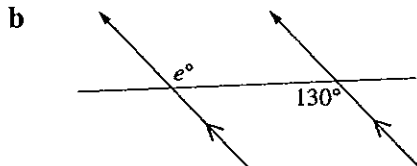
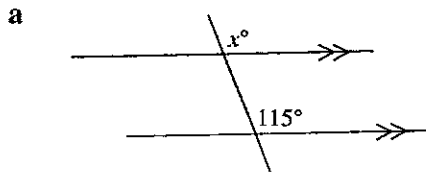


From this diagram, name:

- a the pair of parallel lines, using the symbol for 'is parallel to'
 b the point of intersection of lines AB and EF
 c a line that is a transversal
 d an angle that is supplementary to $\angle JLM$.

Topic test 2: Angles continued

29 (14 marks) Find the value of the pronumerals, stating the reasons for your answers (alternate, corresponding or co-interior).

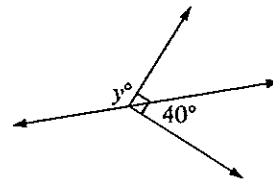


30 (10 marks) Complete each sentence by writing an appropriate word in the space.

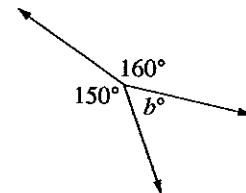
- a _____ angles add to 90° .
- b The two parts of an angle are its arms and its _____.
- c Parallel lines never _____.
- d _____ lines intersect at 90° .
- e _____ angles are found between two lines and on the same side of the transversal.

31 Use a protractor to construct a 35° angle.

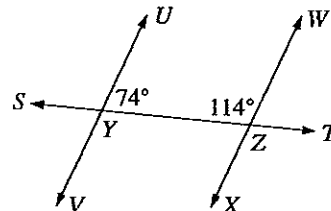
32 Find y° .



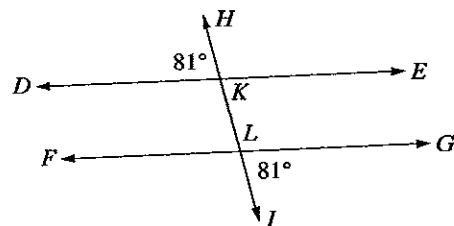
33 Find b° .



34 Is UV parallel to WX ? Give a reason for your answer.



35 In this diagram, $\angle DKH$ and $\angle ILG$ are both equal to 81° . Is DE parallel to FG ? Give reasons for your answer.



This is the end of the test.
(Use the back for extra working space.)

7:04 | Finding the Size of an Angle

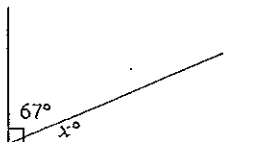
Name: NIKKI HUI

Class: SOLUTIONS

Examples

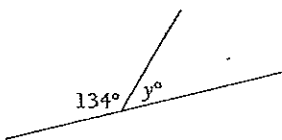
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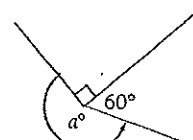
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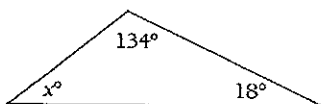
$$\begin{aligned} y &= 180 - 134 \\ &= 46 \end{aligned}$$

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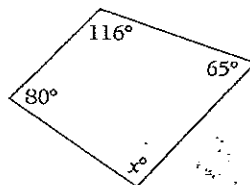
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$$\begin{aligned} x &= 180 - 134 - 18 \\ &= 28 \end{aligned}$$

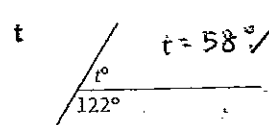
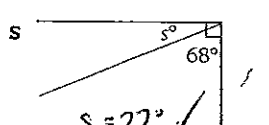
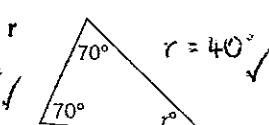
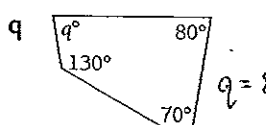
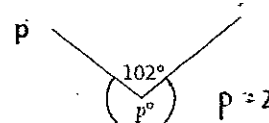
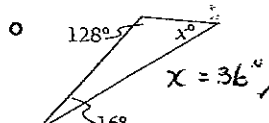
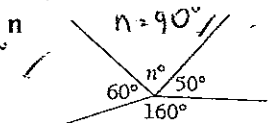
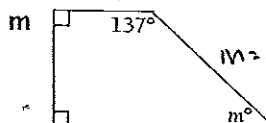
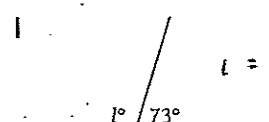
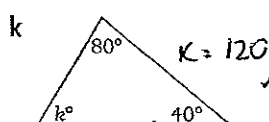
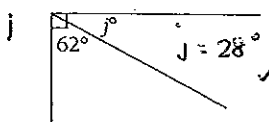
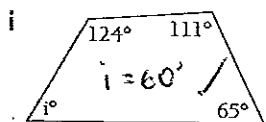
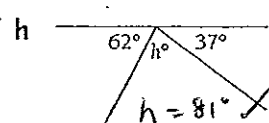
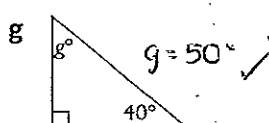
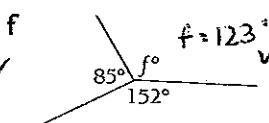
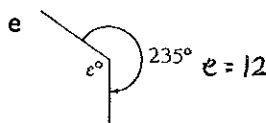
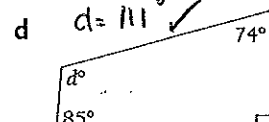
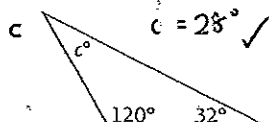
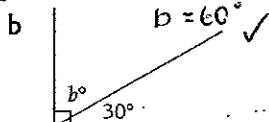
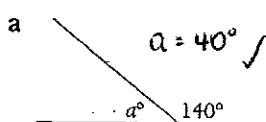
5 The angles in a quadrilateral total 360° .



$$\begin{aligned} x &= 360 - 80 - 116 - 65 \\ &= 99 \end{aligned}$$

Exercise

Find the value of each pronumeral.



Topic test 2

Angles

- Time allowed: 45 minutes. A protractor is required.
- Part A: 20 multiple-choice questions (40 marks)
- Part B: 15 free-response questions (60 marks)

Name: _____

Nikki Hill

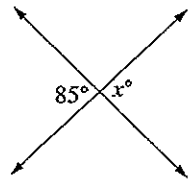
Part A

20 multiple-choice questions
2 marks each: 40 marks

Circle the correct answer each time.

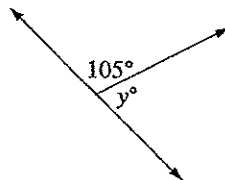
1 $x^\circ = ?$

- A 5° B 105°
 C 85° D 95°



2 $y^\circ = ?$

- A 75° B 105°
 C 85° D 15°

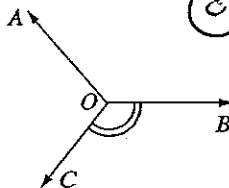


3 Vertically opposite angles are:

- A equal B supplementary
 C complementary D corresponding

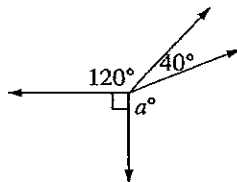
4 The marked angle is:

- A $\angle OCB$ B $\angle AOC$
 C $\angle AOB$ D $\angle BOC$



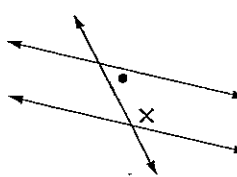
5 $a^\circ = ?$

- A 110° B 120°
 C 140° D 200°

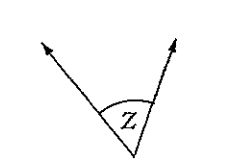
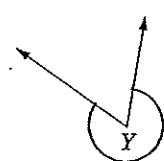
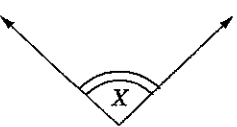
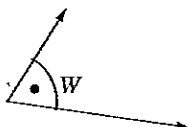


6 The marked angles are:

- A alternate
 B corresponding
 C complementary
 D co-interior



7

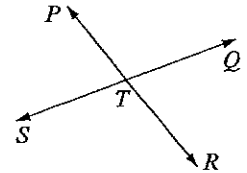


If these angles were listed from smallest to largest, the order would be:

- A YZXW B YXZW C ZWXY D ZXWY

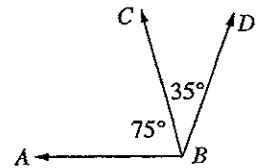
8 Which angle is vertically opposite $\angle PTS$?

- A $\angle QTP$ B $\angle STP$
 C $\angle RTS$ D $\angle QTR$



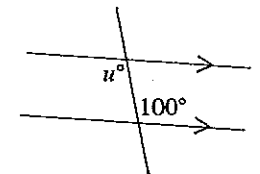
9 $\angle ABD = ?$

- A 110° B 40°
 C 35° D 15°



10 $u^\circ = ?$

- A 50° B 140°
 C 80° D 100°

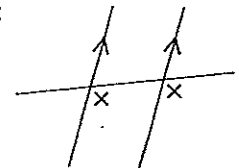


11 Co-interior angles in parallel lines are:

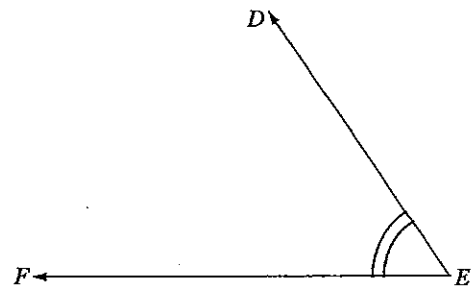
- A complementary B equal
 C supplementary D vertically opposite

12 The angles marked x are:

- A alternate
 B complementary
 C co-interior
 D corresponding



13

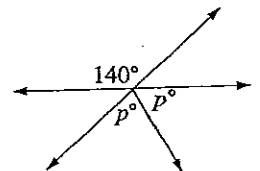


The size of $\angle DEF$ is:

- A 116° B 56° C 64° D 124°

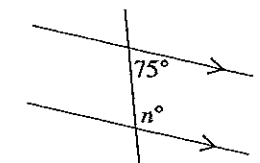
14 $p^\circ = ?$

- A 70° B 20°
 C 140° D 40°



15 $n^\circ = ?$

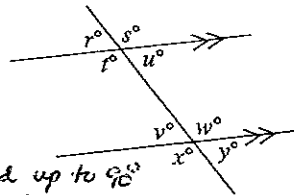
- A 75° B 95°
 C 105° D 150°



Topic test 2: Angles continued

16 Which angle is co-interior to u° ?

- A r° B y°
 ✓ C w° D v°



17 Which angle is complementary to 80° ?

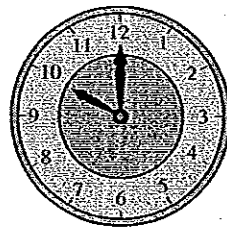
- ✓ A 10° B 90° C 100° D 180°

18 Which of these statements is true?

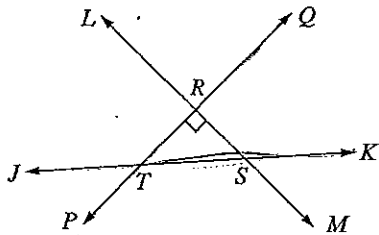
- ✓ A An acute angle is 90° .
 ✓ B A straight angle is the size of two right angles.
 C A revolution is between 270° and 360° .
 D An obtuse angle is between 180° and 270° .

19 What is the size of the acute angle between the hands of a clock at 10 o'clock?

- ✓ A 30° B 20°
 C 30° D 80°



20



Which one of these statements is false?

- A $LM \perp PQ$
 ✓ B JK intersects PQ at R
 C $\angle QRM$ and $\angle PRM$ are equal
 D $\angle RSK$ and $\angle TSM$ are vertically opposite

Part B

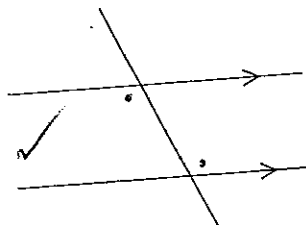
15 free-response questions

2 marks each unless otherwise specified:

60 marks

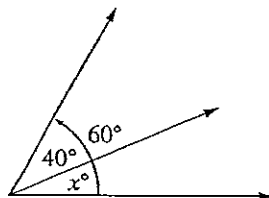
Show your working where appropriate.

21 Mark a pair of alternate angles.

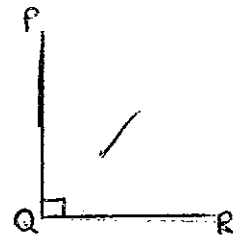


22 Find x° .

$x = 20^\circ$ ✓

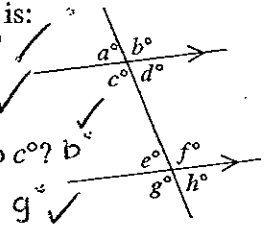


23 Draw a right angle and label it $\angle PQR$. Include the right angle symbol on your diagram.

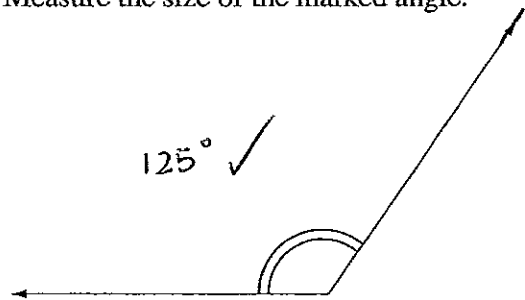


24 (8 marks) Which angle is:

- a co-interior to c° ? e° ✓
 b alternate to c° ? f° ✓
 c vertically opposite to c° ? b° ✓
 d corresponding to c° ? g° ✓

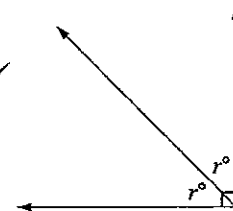


25 Measure the size of the marked angle.

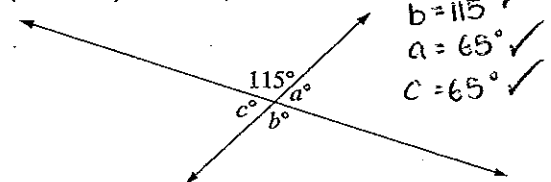


26 Find r° .

$r = 45^\circ$ ✓

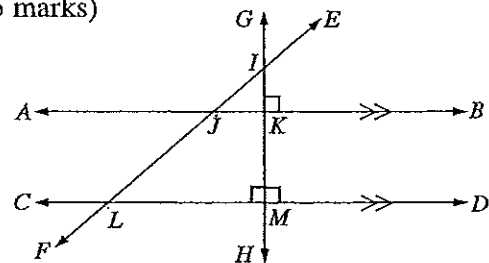


27 (3 marks) Find a° , b° and c° .



$b = 115^\circ$ ✓
 $a = 65^\circ$ ✓
 $c = 65^\circ$ ✓

28 (5 marks)

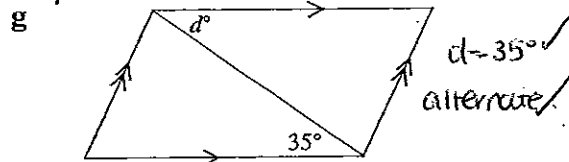
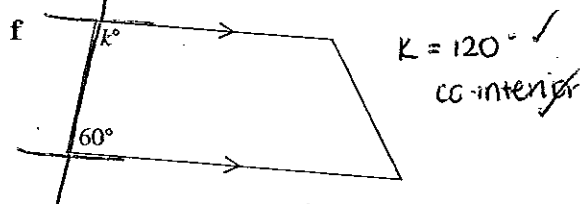
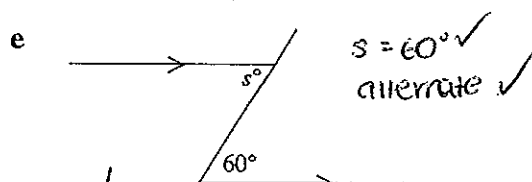
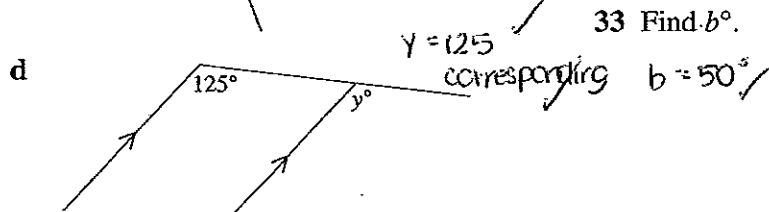
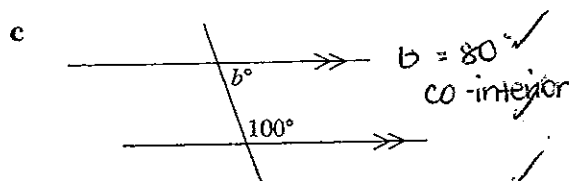
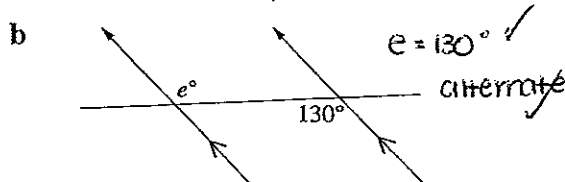
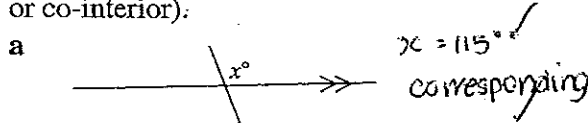


From this diagram, name:

- a the pair of parallel lines, using the symbol for 'is parallel to' $AB \parallel CD$ ✓
 b the point of intersection of lines AB and EF J ✓
 c a line that is a transversal EF ✓
 d an angle that is supplementary to $\angle JLM$.
 $45^\circ \angle CLJ$

Topic test 2: Angles continued

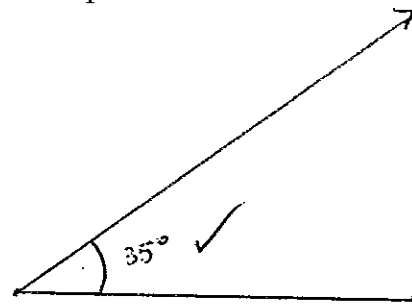
29 (14 marks) Find the value of the pronumerals, stating the reasons for your answers (alternate, corresponding or co-interior):



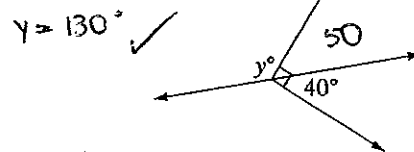
30 (10 marks) Complete each sentence by writing an appropriate word in the space.

- a right angles add to 90° .
 b The two parts of an angle are its arms and its vertex.
 c Parallel lines never intersect.
 d perpendicular lines intersect at 90° .
 e co-interior angles are found between two lines and on the same side of the transversal.

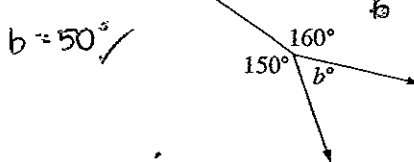
31 Use a protractor to construct a 35° angle.



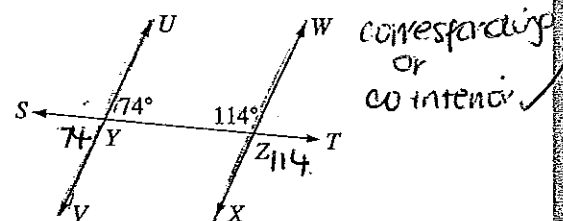
32 Find y° .



33 Find b° .

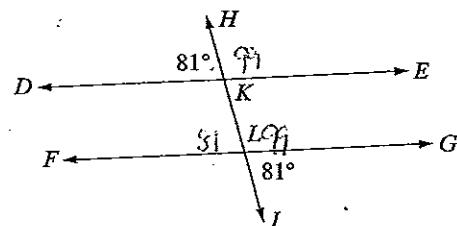


34 Is UV parallel to WX ? Give a reason for your answer.



No ~~because~~ because 74 & 114 ~~are~~ do not add up to 180°

35 In this diagram, $\angle DKH$ and $\angle ILG$ are both equal to 81° . Is DE parallel to FG ? Give reasons for your answer.



Yes because $\angle HLF$ is corresponding to $\angle HKO$

This is the end of the test.
(Use the back for extra working space.)