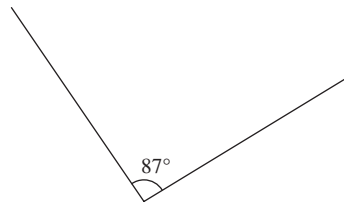


# Fully-worked Solutions

## Practice 8

### Formative Practice

1



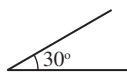
Answer: C

- 2 A False  
B False  
C False  
D True

Answer: D

3 (a) Yes

4 (a)

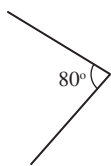


(b) No



Congruent angles

(b)



Non-congruent angles

5 (a) 3 cm

(b) 160°

6  $AB = 3.8$  mm,  $CD = 4.6$  cm,  $\angle x = 37^\circ$ ,  $\angle y = 145^\circ$

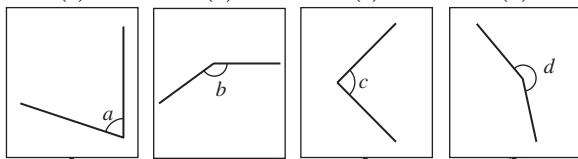
7

(a)

(b)

(c)

(d)



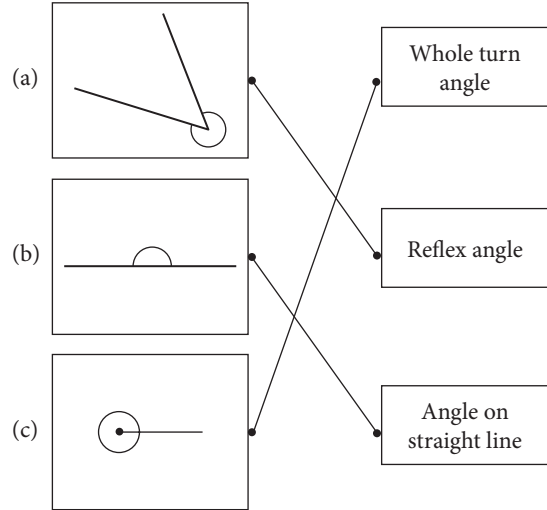
90°

72°

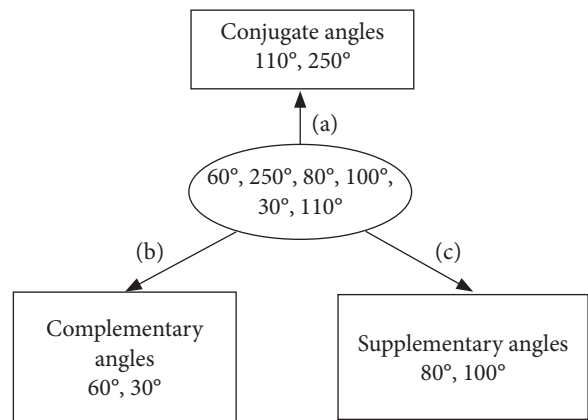
210°

145°

8



9



10 (a)  $x + 70^\circ = 90^\circ$

$$x = 20^\circ$$

(b)  $x + 50^\circ = 180^\circ$

$$x = 130^\circ$$

(b)  $x + 100^\circ = 360^\circ$

$$x = 260^\circ$$

11  $x + 65^\circ = 90^\circ$

$$x = 90^\circ - 65^\circ$$

$$= 25^\circ$$

$$x + y = 180^\circ$$

$$25^\circ + y = 180^\circ$$

$$y = 155^\circ$$

12  $a + b = 360^\circ$

$$a : b = 5 : 4$$

$$a : a + b = 5 : 9$$

$$a : 360^\circ = 5 : 9$$

$$\frac{a}{360^\circ} = \frac{5}{9}$$

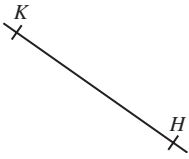
$$a = \frac{5}{9} \times 360^\circ$$

$$= 200^\circ$$

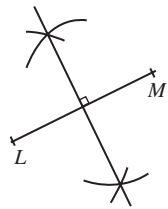
$$200^\circ + b = 360^\circ$$

$$b = 160^\circ$$

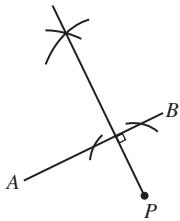
13



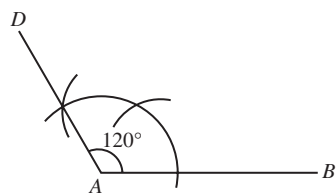
14



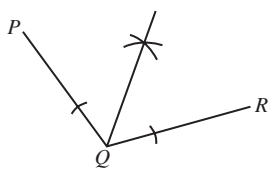
15



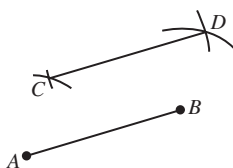
16



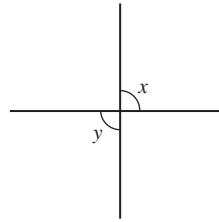
17



18



19

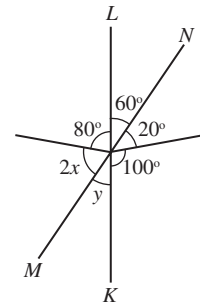


Answer: B

- 20 (a)  *a* and *b*
- (b)  *a* and *c*
- (c)  *b* and *c*
- (d)  *c* and *d*
- (e)  *b* and *d*
- Vertically opposite angles
- Adjacent angles on line

- 21 (a)  $x = 66^\circ$   
 (b)  $x + 149^\circ = 180^\circ$   
 $x = 31^\circ$

22



$$2x + 80^\circ + 60^\circ = 180^\circ$$

$$2x + 140^\circ = 180^\circ$$

$$2x = 40^\circ$$

$$x = 20^\circ$$

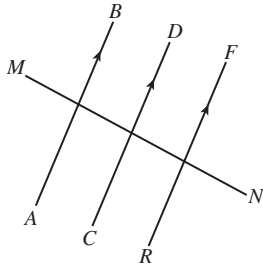
$$y + 100^\circ + 20^\circ = 180^\circ$$

$$y + 120^\circ = 180^\circ$$

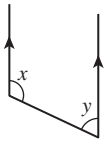
$$y = 60^\circ$$

- 23 A Correct  
 B Correct  
 C Wrong  
 D Correct  
 Answer: C

24

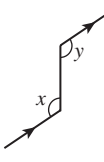


25 (a)



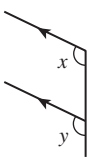
Corresponding angles

(b)



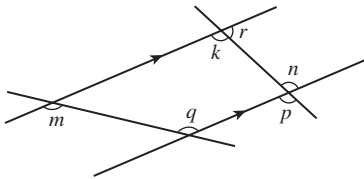
Alternate angles

(c)



Interior angles

26



27 (a)  $a = p$



(b)  $b = q$



(c)  $b + r = 180^\circ$



(d)  $q + r = 180^\circ$



28 (a) Not parallel

(b) Parallel

(c) Parallel

29 (a)  $x = 36^\circ$

(b)  $x = 32^\circ$

(c)  $x + 141^\circ = 180^\circ$

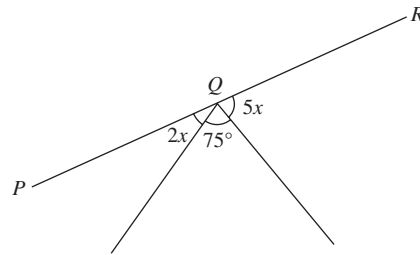
$$x = 39^\circ$$

30 (a) The angle of elevation of B from C is  $\angle DCB$

(b) The angle of depression of C from B is  $\angle ABC$

### Summative Practice

1



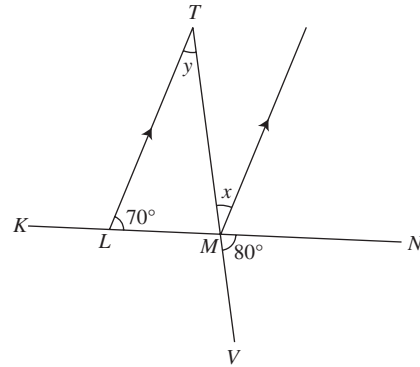
$$2x + 75^\circ + 5x = 180^\circ$$

$$7x = 105^\circ$$

$$x = 15^\circ$$

Answer: B

2



$$x = y$$

$$\angle LMT = 80^\circ$$

$$y + 70^\circ + 80^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 30^\circ$$

$$x + y = 30^\circ + 30^\circ$$

$$= 60^\circ$$

Answer: D

3  $43^\circ + y = 90^\circ$

$$y = 47^\circ$$

$$x + 43^\circ = 68^\circ$$

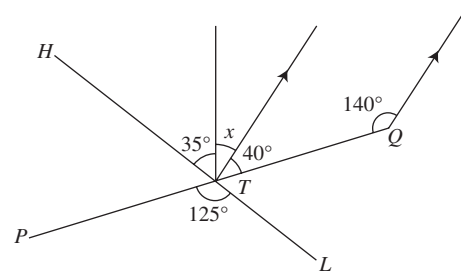
$$x = 25^\circ$$

$$x + y = 25^\circ + 47^\circ$$

$$= 72^\circ$$

Answer: B

4



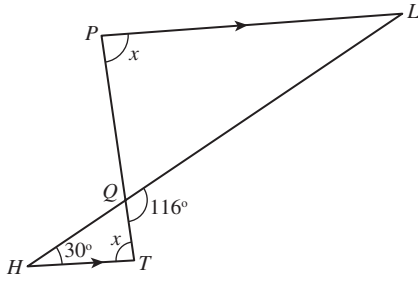
$$35^\circ + x + 40^\circ = 125^\circ$$

$$x + 75^\circ = 125^\circ$$

$$x = 50^\circ$$

Answer: C

5



$$x + 30^\circ = 116^\circ$$

$$x = 86^\circ$$

Answer: **D**

6 (a)  $BC = 5.5 \text{ cm}$  (b)  $\angle BAC = 140^\circ$

7  $x + y = 360^\circ \dots\dots\dots$  ①

$y = x - 20^\circ \dots\dots\dots$  ②

Substitute ② into ①,

$$x + (x - 20^\circ) = 360^\circ$$

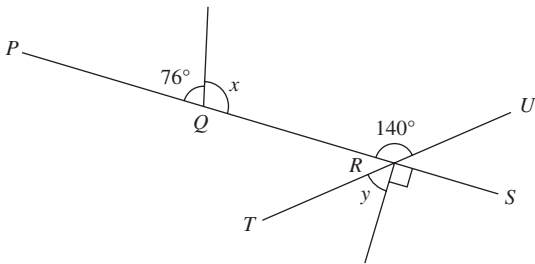
$$2x = 380^\circ$$

$$x = 190^\circ$$

$$y = 190^\circ - 20^\circ$$

$$= 170^\circ$$

8



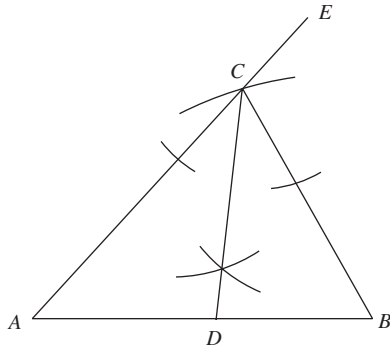
$$x + 76^\circ = 180^\circ$$

$$x = 104^\circ$$

$$y + 90^\circ = 140^\circ$$

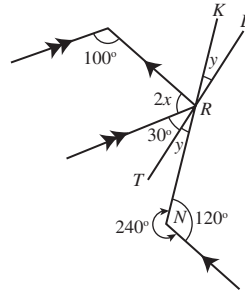
$$y = 50^\circ$$

9 (a)



(b)  $\angle BDC = 83^\circ$

10



$$2x + 100^\circ = 180^\circ$$

$$2x = 80^\circ$$

$$x = 40^\circ$$

$$2x + 30^\circ + y = 120^\circ$$

$$80^\circ + 30^\circ + y = 120^\circ$$

$$110^\circ + y = 120^\circ$$

$$y = 10^\circ$$

11 (a)  $\angle GHL = 180^\circ - 140^\circ$

$$= 40^\circ$$

$$\angle LHN = 40^\circ + 110^\circ$$

$$= 150^\circ$$

$$= \angle HNM$$

$\therefore HL$  and  $MN$  are parallel.

(b)  $\angle HGP = 180^\circ - 110^\circ$

$$= 70^\circ$$

$$x + 70^\circ + 58^\circ = 180^\circ$$

$$x + 128^\circ = 180^\circ$$

$$x = 52^\circ$$

12 (a)  $x = 54^\circ, y = 60^\circ$

(b) Angle of depression of the car from Ahmad's eyes

$$= 90^\circ - 54^\circ$$

$$= 36^\circ$$

(c) Angle of elevation of the aeroplane from Ahmad's eyes

$$= 90^\circ - 60^\circ$$

$$= 30^\circ$$