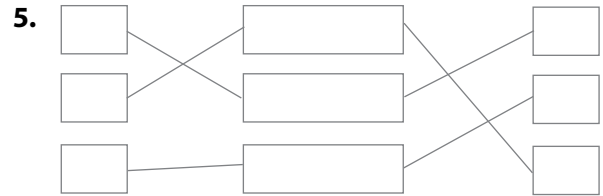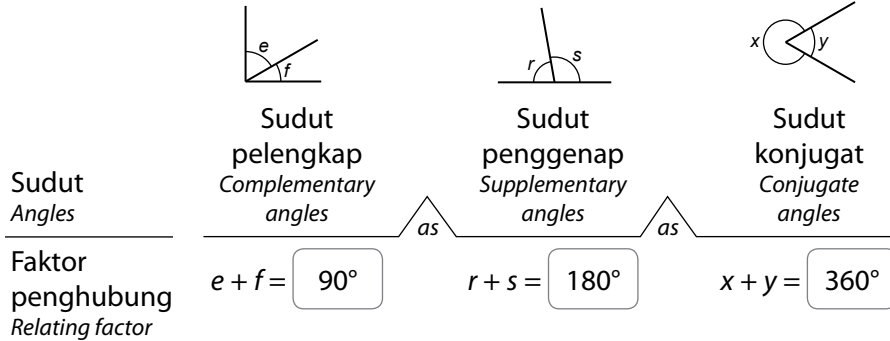**1.** (a) kongruen ; sama panjang
   congruent ; same length
   (b) sama saiz ; sudut kongruen
   the same size ; congruent angles

2. (a) ✗ (b) ✓
   (c) ✗

3. (a) Kongruen kerana ∠ABC dan ∠STU mempunyai saiz sudut yang sama.
   Congruent because ∠ABC and ∠STU have the same size of angle.
   (b) Tidak kongruen kerana ∠ABC dan ∠STU mempunyai saiz sudut yang berbeza.
   Not congruent because ∠ABC and ∠STU have different sizes of angle.

(c) Kongruen kerana ∠ABC dan ∠STU mempunyai saiz sudut yang sama.
   Congruent because ∠ABC and ∠STU have the same size of angle.

4. (a) 4 cm ; 3.5 cm
   (b) 100° ; 95°

5.

6.

Sudut *Angles*	Sudut pelengkap *Complementary angles*	Sudut penggenap *Supplementary angles*	Sudut konjugat *Conjugate angles*
Faktor penghubung *Relating factor*	$e + f = \boxed{90°}$	$r + s = \boxed{180°}$	$x + y = \boxed{360°}$

7. (a) $s + 25° + 47° = 90°$
   $s + 72° = 90°$
   $s = 90° - 72°$
   $s = 18°$

(b) $s + s + s = 90°$
   $3s = 90°$
   $s = \dfrac{90°}{3}$
   $s = 30°$

(c) $3s + 20° + 2s = 90°$
   $5s + 20° = 90°$
   $5s = 90° - 20°$
   $5s = 70°$
   $s = 14°$

8. (a) $2m + 73° + 85° = 180°$
   $2m + 158° = 180°$
   $2m = 180° - 158°$
   $2m = 22°$
   $m = 11°$

(b) $63° + 3m = 180°$
   $3m = 180° - 63°$
   $3m = 117°$
   $m = 39°$

(c) $5m + 3m + m = 180°$
   $9m = 180°$
   $m = \dfrac{180°}{9}$
   $m = 20°$

9. (a) $k + k + 90° = 360°$
   $2k + 90° = 360°$
   $2k = 360° - 90°$
   $2k = 270°$
   $k = 135°$

(b) $2k + 90° + 3k + 90° = 360°$
   $5k + 180° = 360°$
   $5k = 360° - 180°$
   $5k = 180°$
   $k = 36°$

10. (a)
$$a + 25° = 90°$$
$$a = 90° - 25°$$
$$= 65°$$

$$a + b = 180°$$
$$65° + b = 180°$$
$$b = 180° - 65°$$
$$= 115°$$

$$b + c = 180°$$
$$115° + c = 180°$$
$$c = 180° - 115°$$
$$= 65°$$

$$c + d + 25° = 180°$$
$$65° + d + 25° = 180°$$
$$d + 90° = 180°$$
$$d = 180° - 90°$$
$$= 90°$$

Maka / *Therefore*, $a = 65°$, $b = 115°$, $c = 65°$, dan / *and* $d = 90°$.

(b) $$s + 70° = 90°$$
$$s = 90° - 70°$$
$$= 20°$$

$$r + 310° = 360°$$
$$r = 360° - 310°$$
$$= 50°$$

$$p + 70° = 180°$$
$$p = 180° - 70°$$
$$= 110°$$

$$q + 110° + 70° + 20° + 50° = 360°$$
$$q + 250° = 360°$$
$$q = 360° - 250°$$
$$= 110°$$

Maka / *Therefore*, $p = 110°$, $q = 110°$, $r = 50°$, dan / *and* $s = 20°$.

11. (a) (i)

(ii)

(b) (i)

(ii)

(c) (i)

(ii)

(d) (i)

(ii)

12. (a) (i)

(ii)

(b) (i)

(ii)
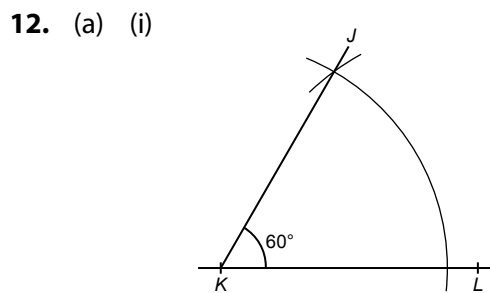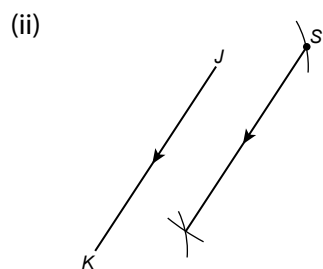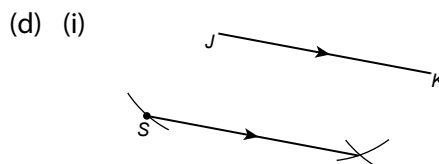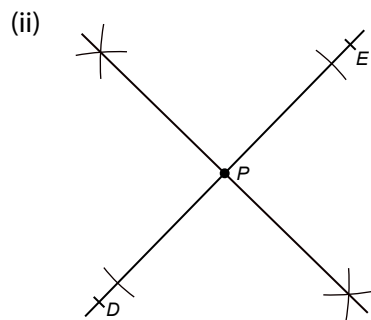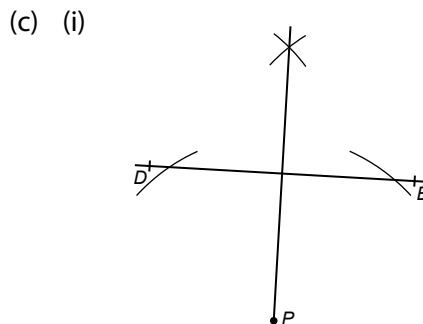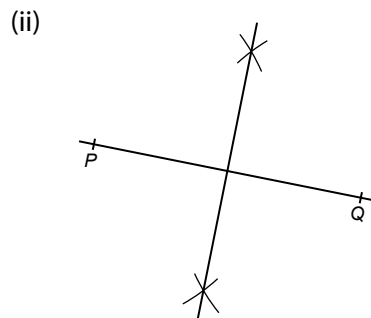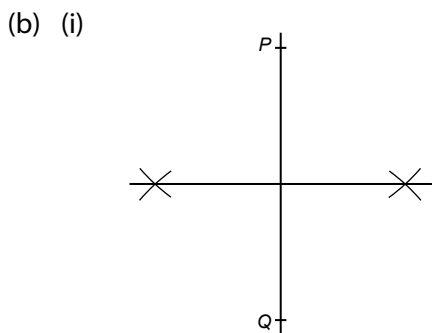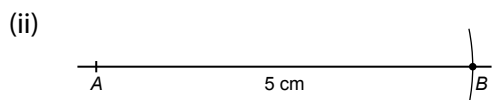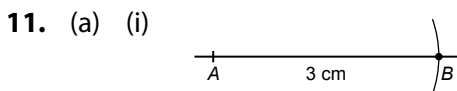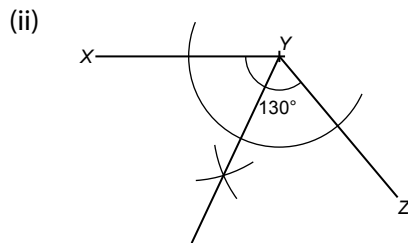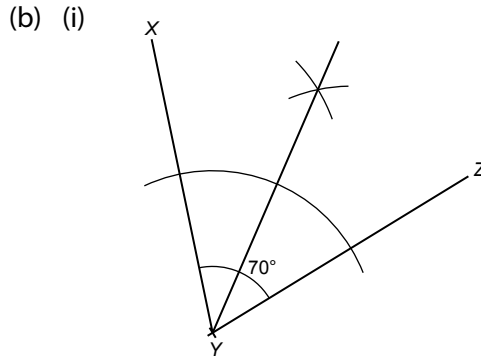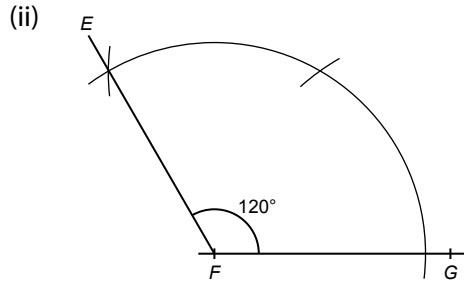
13. (a) (i) p dan/ *and* r
     (ii) q dan/ *and* s

   (b) (i) $\angle p = \angle r$
     (ii) $\angle q = \angle s$

   (c) (i) $\angle p + \angle s = 180°$
     (ii) $\angle s + \angle r = 180°$
     (iii) $\angle r + \angle q = 180°$
     (iv) $\angle q + \angle p = 180°$
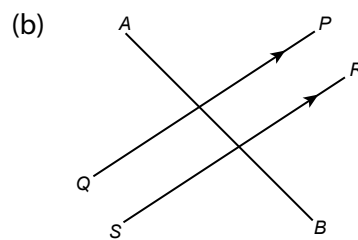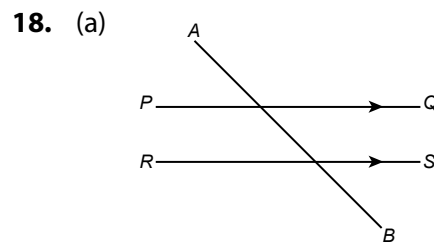
   (d) berserenjang
     perpendicular

14. (a)

   (b)
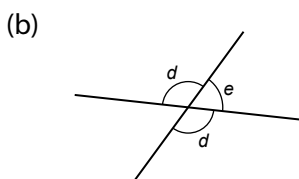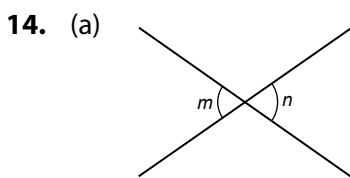
15. (a) $a = 180° - 90°$
         $= 90°$
       $b = 65°$

   (b) $a = 66°$
       $b = 180° - 100°$
         $= 80°$

16. (a) $80° + 2x + 3x = 180°$
           $80° + 5x = 180°$
                $5x = 100°$
                  $x = 20°$

       $30° + y + 3x + 2x = 180°$
   $30° + y + 3(20°) + 2(20°) = 180°$
              $130° + y = 180°$
                   $y = 50°$

   (b) $36° + 70° + x + 30° = 180°$
                  $x = 180° - 36° - 70° - 30°$
                    $= 44°$

        $70° + x + 30° + y = 180°$
       $70° + 44° + 30° + y = 180°$
                  $y = 180° - 70° - 44° - 30°$
                    $= 36°$

17. (c) ✓   (d) ✓

18. (a)

   (b)

19. (a) $=$ (b) $=$
   (c) $180°$

20. (a) Selari
       Parallel
   (b) $63° + 115° = 178°$
                 $\neq 180°$
       Tidak selari / *Not parallel*
   (c) Selari
       Parallel
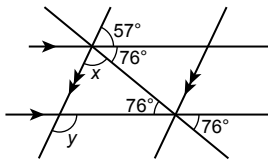   (d) Tidak selari
       Not parallel

21. (a)
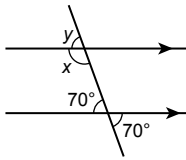
$$x = 180° - 70°$$
$$= 110°$$
$$y = 70°$$

(b)

$$x = 180° - 57° - 76°$$
$$= 47°$$
$$y = 180° - 57°$$
$$= 123°$$

(c) $x = 25°$
$y = 180° - 25° - 40° = 115°$

22. (a) Sudut dongak
Angle of elevation
(b) Sudut tunduk
Angle of depression

23. (a)

Kapal
Ship
Rumah api
Lighthouse

(b)

Rama–rama
Butterfly
Kucing
Cat
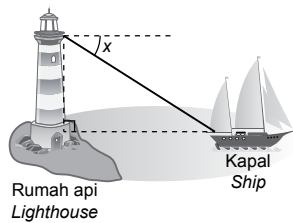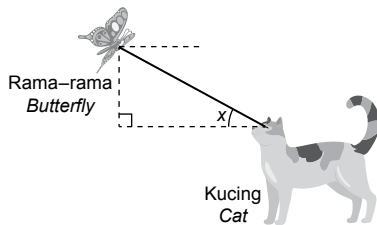
24. (a) (i) Katakan *a* ialah sudut tunduk Kai Lee dari layang-layang.
Let a be the angle of depression of Kai Lee from the kite.

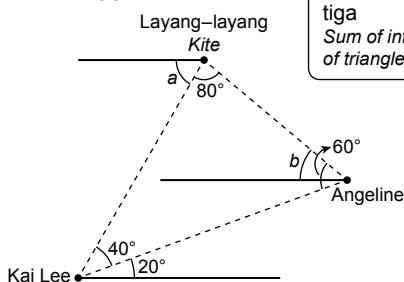$$x + 10° + 3x - 10° + 2x = 180°$$
$$6x = 180°$$
$$x = 30°$$

$$a = 40° + 20°$$
$$= 60°$$

Hasil tambah sudut pedalaman segi tiga
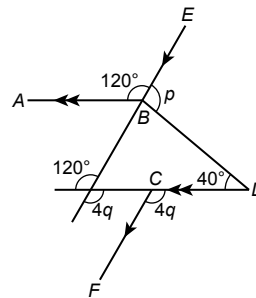*Sum of interior angles of triangle*

Layang–layang
Kite
Angeline
Kai Lee

(ii) Katakan *b* ialah sudut dongak layang-layang dari Angeline.
Let b be the angle of elevation of the kite from Angeline.

$$b = 60° - 20°$$
$$= 40°$$

(b)

$$\angle ABD = 180° - 40°$$
$$= 140°$$

$$p = 360° - 120° - 140°$$
$$= 100°$$

$$4q = 120°$$
$$q = 30°$$

$$p + q = 100° + 30°$$
$$= 130°$$

25. Aktiviti PAK-21

26. Projek STEM

Praktis Masteri 8

BAHAGIAN A

1. Jawapan / *Answer*: **D**

2.
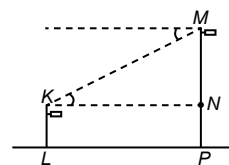
Jawapan / *Answer*: **A**

3. **A**: $60° + 300°$
$= 360°$

B: $70° + 200°$
$= 270°$

C: $75° + 105°$
$= 180°$

D: $30° + 60°$
$= 90°$ ☑

Jawapan / *Answer*: **D**

4. $q + p = 90°$ ← Sudut bertentang bucu / *Vertically opposite angle*

Diberi / *Given* $p = 2q$,

Maka / *Therefore*,

$q + 2q = 90°$

$\quad 3q = 90°$

$\quad\ q = 30°$

$30° + p = 90°$

$\quad\ p = 90° - 30°$

$\quad\ \ = 60°$

Jawapan / *Answer*: **C**

5. **A**: $p \neq r$

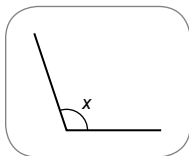**B**: $q = u$

$v = r$

$s + u + v = 180°$

C: $q \neq v$

D: $r + t + u \neq 360°$

Jawapan / *Answer*: **B**

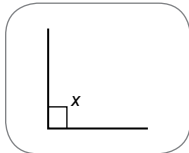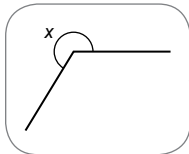## BAHAGIAN ≫ B

6.

Sudut refleks / *Reflex angle*
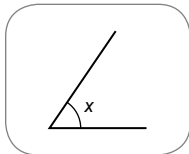
Sudut cakah / *Obtuse angle*

Sudut tegak / *Right-angled*

Sudut tirus / *Acute angle*

7. (a) ✗   (b) ✓

(c) ✓   (d) ✓

8. (a) Selari / *Parallel*

(b) Selari / *Parallel*

(c) Selari / *Parallel*

(d) Tidak selari / *Not parallel*

BAHAGIAN ≫ C

9. (a) (i) b dan c, d dan e / *b and c, d and e*

(ii) $\angle QRT = 360° - 76° - 230°$

$\qquad\quad = 54°$

$\qquad x = 180° - 54°$

$\qquad\quad = 126°$

(b) (i) $\angle EFG = 133°$

(ii)
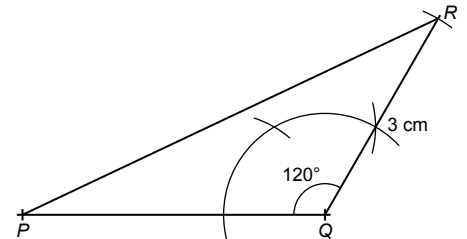
$PR = 6.1$ cm

(c) $\angle EDH = 180° - 68° - 30°$

$\qquad\quad = 82°$

$\angle EFG = 82° + p$

$68° + 82° + p + 44° + 82° + p = 360°$

$\qquad\qquad 2p + 276° = 360°$

$\qquad\qquad\qquad\ 2p = 84°$

$\qquad\qquad\qquad\ \ p = 42°$

10. (a) selang-seli / *alternate*

(b) (i), (ii)
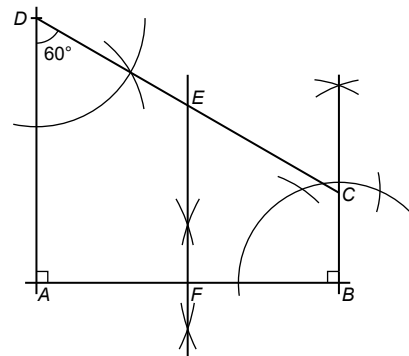
(c) $\angle DEH = \angle GHR$

$\qquad n = 180° - 117°$

$\qquad\ \ = 63°$

$m = 106° - n$

$\quad = 106° - 63°$

$\quad = 43°$

Fokus KBAT

$x + y = 142°$ ....①

BDE ialah sebuah segi tiga sama kaki.
BDE is an isosceles triangle.

$2x + y = 180°$ ....②

Daripada / *From* ①:

$x = 142° − y$ ....③

Gantikan ③ ke dalam ②:
Substitute ③ into ②:

$2(142° − y) + y = 180°$
$284° − 2y + y = 180°$
$−y = 180° − 284°$
$y = 104°$

Gantikan $y = 104°$ ke dalam ③:
Substitute y = 104° into ③:

$x = 142° − 104°$
$= 38°$

$∠CBD = 38°$ ⟵ Sudut selang seli
Alternate angles

$38° + z = 180°$
$z = 180° − 38°$
$= 142°$