

第5期

2版

12.2 三角形全等的判定(二)

第3课时

1.B

2.证明: $\because AB \perp AC, AD \perp AE,$
 $\therefore \angle BAE + \angle CAE = 90^\circ, \angle BAE + \angle BAD =$

$90^\circ.$

$\therefore \angle CAE = \angle BAD.$

在 $\triangle ABD$ 和 $\triangle ACE$ 中,

$\begin{cases} \angle BAD = \angle CAE, \\ AB = AC, \\ \angle ABD = \angle ACE, \end{cases}$

$\therefore \triangle ABD \cong \triangle ACE (\text{ASA}).$

$\therefore BD = CE.$

3.A

4.证明: $\because AC \parallel DF,$

$\therefore \angle ACB = \angle F.$

在 $\triangle ABC$ 和 $\triangle DEF$ 中,

$\begin{cases} \angle ACB = \angle F, \\ \angle A = \angle D, \\ AB = DE, \end{cases}$

$\therefore \triangle ABC \cong \triangle DEF (\text{AAS}).$

$\therefore BC = EF.$

$\therefore BC - CE = EF - CE,$ 即 $BE = CF.$

第4课时

1.D

2.证明: $\because DE \perp AB, DF \perp AC,$

$\therefore \angle DEB = \angle DFC = 90^\circ.$

\because 点 D 是 BC 的中点,

$\therefore BD = CD.$

在 $\text{Rt} \triangle BDE$ 和 $\text{Rt} \triangle CDF$ 中,

$\begin{cases} BD = CD, \\ BE = CF, \end{cases}$

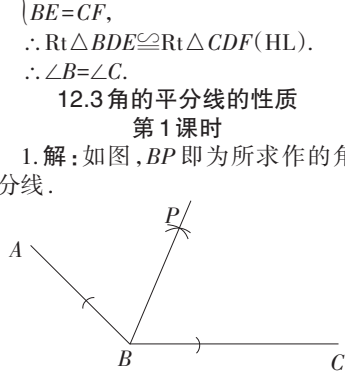
$\therefore \text{Rt} \triangle BDE \cong \text{Rt} \triangle CDF (\text{HL}).$

$\therefore \angle B = \angle C.$

12.3 角的平分线的性质

第1课时

1.解: 如图, BP 即为所求作的角的平分线.



(第1题图)

2.B

3.C

第2课时

1.证明: $\because DE \perp AB, DF \perp AC,$

$\therefore \angle E = \angle DFC = 90^\circ.$

在 $\text{Rt} \triangle BDE$ 和 $\text{Rt} \triangle CDF$ 中,

$\begin{cases} BD = CD, \\ BE = CF, \end{cases}$

$\therefore \text{Rt} \triangle BDE \cong \text{Rt} \triangle CDF (\text{HL}).$

$\therefore DE = DF.$

$\therefore AD$ 平分 $\angle BAC.$

2.38°

3~4版

一、选择题

1~5.DBBCB

6~10.DAADB

二、填空题

11.200

12. $AC = DF$ 或 $\angle B = \angle E$ 或 $\angle C = \angle F$

13.35°

14.0.4

15.5

三、解答题(一)

16.证明: $\because EF \parallel BC,$

$\therefore \angle DFE = \angle ACB.$

$\because AB \parallel DE, \therefore \angle A = \angle D.$

在 $\triangle ABC$ 和 $\triangle DEF$ 中,

$\begin{cases} \angle A = \angle D, \\ AC = DF, \\ \angle ACB = \angle DFE, \end{cases}$

$\therefore \triangle ABC \cong \triangle DEF (\text{ASA}).$

17.证明: $\because BF = DE,$

$\therefore BF - EF = DE - EF,$

即 $BE = DF.$

在 $\triangle ABE$ 和 $\triangle CDF$ 中,

$\begin{cases} \angle A = \angle C, \\ \angle 1 = \angle 2, \\ BE = DF, \end{cases}$

$\therefore \triangle ABE \cong \triangle CDF (\text{AAS}).$

18.证明: $\because \angle CAD = \angle EAB,$

$\therefore \angle CAD - \angle BAD = \angle EAB - \angle BAD,$

即 $\angle CAB = \angle EAD.$

在 $\triangle CAB$ 和 $\triangle EAD$ 中,

$\begin{cases} \angle C = \angle E, \\ AC = AE, \\ \angle CAB = \angle EAD, \end{cases}$

$\therefore \triangle CAB \cong \triangle EAD (\text{ASA}).$

$\therefore AB = AD.$

四、解答题(二)

19.解:(1) $\angle CAD = \angle EAB.$ (答案不唯一,正确即可)

(2)证明: $\because \angle CAD = \angle EAB,$

$\therefore \angle CAD + \angle BAD = \angle EAB + \angle BAD,$

即 $\angle BAC = \angle DAE.$

在 $\triangle ABC$ 和 $\triangle ADE$ 中,

$\begin{cases} \angle BAC = \angle DAE, \\ AC = AE, \\ \angle C = \angle E, \end{cases}$

$\therefore \triangle ABC \cong \triangle ADE (\text{ASA}).$

$\therefore AB = AD.$

20.解: $\because AD$ 为 $\angle BAC$ 的平分线,

$DE \perp AB, DF \perp AC,$

$\therefore DE = DF.$

$\therefore S_{\triangle ABC} = S_{\triangle ABD} + S_{\triangle ACD} = \frac{1}{2} AB \cdot DE + \frac{1}{2} AC \cdot$

$DF,$

$\therefore S_{\triangle ABC} = \frac{1}{2} (AB + AC) \cdot DE,$

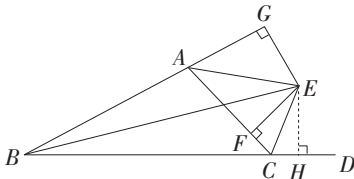
即 $\frac{1}{2} \times (15 + 13) \times DE = 84.$

解得 $DE = 6.$

$\therefore DE$ 的长为 6 cm.

21.证明:(1) 如图, 过点 E 作 $EH \perp$

BD 于点 $H.$



(第21题图)

$\because BE$ 平分 $\angle ABC, EG \perp BA, EH \perp BD,$

$\therefore EG = EH.$

$\because CE$ 平分 $\angle ACD, EF \perp AC, EH \perp CD,$

$\therefore EF = EH.$

$\therefore EG = EF.$

(2) $\because EG \perp BA, EF \perp AC,$

$\therefore \angle AGE = \angle AFE = 90^\circ.$

在 $\text{Rt} \triangle AEG$ 和 $\text{Rt} \triangle AEF$ 中,

$\begin{cases} AE = AE, \\ EG = EF, \end{cases}$

$\therefore \text{Rt} \triangle AEG \cong \text{Rt} \triangle AEF (\text{HL}).$

$\therefore \angle AEG = \angle AEF.$

五、解答题(三)

22.解:(1) 证明: $\because DE \parallel AB,$

$\therefore \angle BDE = \angle ABC.$

在 $\triangle ABC$ 和 $\triangle BDE$ 中,

$\begin{cases} \angle C = \angle E, \\ \angle ABC = \angle BDE, \\ AB = BD, \end{cases}$

$\therefore \triangle ABC \cong \triangle BDE (\text{AAS}).$

(2) $\because \angle A = 80^\circ, \triangle ABC \cong \triangle BDE,$

$\therefore \angle DBE = \angle A = 80^\circ.$

$\therefore \angle ABE = 120^\circ,$

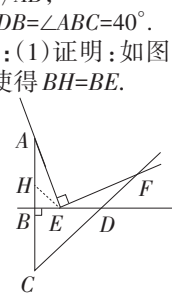
$\therefore \angle ABC = \angle ABE - \angle DBE = 120^\circ - 80^\circ = 40^\circ.$

$\therefore DE \parallel AB,$

$\therefore \angle EDB = \angle ABC = 40^\circ.$

23.解:(1) 证明: 如图①, 在 BA 上

截取 $BH,$ 使得 $BH = BE.$



(第23题图①)

$\because BC = AB = BD, BE = BH,$

$\therefore AB - BH = BD - BE,$ 即 $AH = ED.$

$\therefore \angle AEF = \angle ABE = 90^\circ,$

$\therefore \angle AEB + \angle FED = 90^\circ, \angle AEB +$

$\angle BAE = 90^\circ.$

$\therefore \angle FED = \angle EAH.$

$\therefore EF \parallel AB, \therefore \angle EFC = \angle B = 60^\circ.$

$\therefore \triangle EFC$ 是等边三角形.

(2) $\because \triangle ABC$ 是等边三角形,

$\therefore \angle A = 60^\circ, AC = AB.$

$\because DE \perp AC,$ 即 $\angle AED = 90^\circ,$

$\therefore \angle ADE = 90^\circ - 60^\circ = 30^\circ.$

$\because AE = 2 \text{ cm}, \therefore AD = 2AE = 4 \text{ cm}.$

\because 点 D 是 AB 的中点,

$\therefore AB = 2AD = 8 \text{ cm}. \therefore AC = AB = 8 \text{ cm}.$

$\therefore CE = AC - AE = 6 \text{ cm}.$

$\therefore \triangle EFC$ 是等边三角形,

$\therefore \triangle EFC$ 的周长 $= 3CE = 18 \text{ cm}.$

五、解答题(三)

22.解:(1) 证明: ① $\because AD \parallel BE,$

$\therefore \angle ADB = \angle DBC.$

$\because BD$ 平分 $\angle ABC,$

$\therefore \angle ABD = \angle DBC.$

$\therefore \angle ABD = \angle ADB. \therefore AB = AD.$

② $\because AD \parallel BE, \therefore \angle ADC = \angle DCE.$

$\because AB = AC, AB = AD,$

$\therefore AC = AD. \therefore \angle ACD = \angle ADC.$

$\therefore \angle ACD = \angle DCE.$

$\therefore CD$ 平分 $\angle ACE.$

(2) $\angle BDC = \frac{1}{2} \angle BAC.$ 证明如下:

$\because BD, CD$ 分别平分 $\angle ABE, \angle ACE,$

$\therefore \angle DBC = \frac{1}{2} \angle ABC, \angle DCE = \frac{1}{2} \angle ACE.$

$\therefore \angle BDC + \angle DBC = \angle DCE,$

$\therefore \angle BDC + \frac{1}{2} \angle ABC = \frac{1}{2} \angle ACE.$

$\therefore \angle BAC + \angle ABC = \angle ACE,$

$\therefore \angle BDC + \frac{1}{2} \angle ABC = \frac{1}{2} \angle ABC +$

$\frac{1}{2} \angle BAC.$

$\therefore \angle BDC = \frac{1}{2} \angle BAC.$

23.解: 在 $\triangle ABC$ 中,

$\because \angle C = 90^\circ, \angle A = 30^\circ,$

$\therefore \angle B = 60^\circ.$

$\because 4 \div 2 = 2,$

$\therefore 0 \leq t \leq 2, BP = (4 - 2t) \text{ cm}, BQ = t (\text{cm}).$

(1) 当 $BP = BQ$ 时, $\triangle PBQ$ 为等边三

角形,

即 $4 - 2t = t.$

解得 $t = \frac{4}{3}.$

所以当 $t = \frac{4}{3}$ 时, $\triangle PBQ$ 为等边三角形.

(2) 若 $\triangle PBQ$ 为直角三角形,

① 当 $\angle BQP = 90^\circ$ 时, $BP = 2BQ,$

即 $4 - 2t = 2t.$

解得 $t = 1.$

② 当 $\angle BPQ = 90^\circ$ 时, $BQ = 2BP,$

即 $t = 2(4 - 2t).$

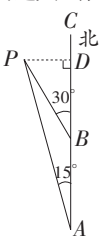
解得 $t = \frac{8}{5}.$

所以当 $t = \frac{8}{5}$ 或 $t = 1$ 时, $\triangle PBQ$ 为直

角三角形.

18.解: 轮船继续向前航行, 无触礁的危险.

理由: 如图, 过点 P 作 $PD \perp AC$ 于点 $D.$



(第18题图)

依题意, 得 $AB = 2 \times 20 = 40$ (海里).

$\because \angle PAB = 15^\circ, \angle PBC = 30^\circ,$

$\therefore \angle APB = \angle PBC - \angle PAB = 15^\circ.$

$\therefore \angle APB = \angle A.$

$\therefore PB = AB = 40$ 海里.

在 $\text{Rt} \triangle PBD$ 中, $\angle PBD = 30^\circ,$

$\therefore PD = \frac{1}{2} PB = 20$ (海里).

$\because 20$ 海里 > 18 海里,

\therefore 轮船继续向前航行, 无触礁的危险.

四、解答题(二)

19.解:(1) 证明: $\because EB$ 平分 $\angle DEC,$

$\therefore \angle DEB = \angle BEC.$

$\because DE \parallel BC,$

$\therefore \angle DEB = \angle EBC.$

$\therefore \angle BEC = \angle EBC.$

$\therefore BC = CE.$

(2) $\because BC = CE, CE = AB,$

$\therefore BC = BA.$

$\therefore \angle C = \angle A.$

设 $\angle C = \angle A = x.$

$\because EA = EB, \therefore \angle ABE = \angle A = x.$

$\therefore \angle EBC = \angle BEC = \angle A + \angle ABE = 2x.$

$\therefore 2x + 2x + x = 180^\circ.$ 解得 $x = 36^\circ.$

$\therefore \angle C = 36^\circ.$

20.解:(1) $\because DE$ 是边 AB 的垂直平

分线,

$\therefore AE = BE.$

$\therefore \angle BAE = \angle B = 30^\circ.$

$\because AE$ 平分 $\angle BAC,$

$\therefore \angle EAC = \angle BAE = 30^\circ.$

$\therefore \angle BAC = \angle BAE + \angle EAC = 30^\circ + 30^\circ = 60^\circ.$

$\therefore \angle C = 180^\circ - \angle BAC - \angle B = 180^\circ - 60^\circ -$

$30^\circ = 90^\circ.$

(2) $\because AE$ 平分 $\angle BAC, \angle ACB = 90^\circ,$

$DE \perp AB,$

$\therefore EC = ED = 2.$

$\because DE$ 垂直平分 $AB,$

$\therefore \angle BDE = 90^\circ.$

在 $\text{Rt} \triangle BDE$ 中,

$\therefore \angle B = 30^\circ,$

$\therefore BE = 2DE = 4.$

$\therefore BC = BE + EC = 4 + 2 = 6.$

21.解:(1) 证明: $\because \triangle ABC$ 是等边三

角形,

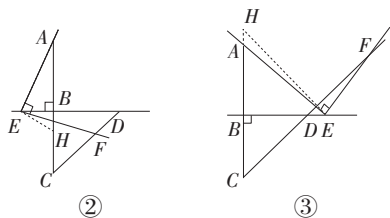
$\therefore \angle B = \angle C = 60^\circ.$

$\therefore \angle BHE = \angle CDB = 45^\circ$,
 $\therefore \angle AHE = \angle EDF = 135^\circ$.
 $\therefore \triangle AHE \cong \triangle EDF$.

$\therefore AE = EF$.

(2) 如图②, 在 BC 上截取 $BH = BE$, 同法可证: $AE = EF$.

如图③, 延长 BA 至点 H , 使得 $BH = BE$. 同法可证: $AE = EF$.



(第23题图)

第6期 3~4版

一、选择题

1~5. CBBAD 6~10. DBACD

二、填空题

11. 4

12. 55°

13. $BF = EC$ 或 $BC = EF$ 或 $AB \parallel DE$ 或 $\angle A = \angle D$ 或 $\angle B = \angle E$

14. 106°

15. $(-2, -2)$ 或 $(4, -2)$

三、解答题(一)

16. 证明: $\because \angle 1 = \angle 2$,
 $\therefore \angle 1 + \angle EAC = \angle 2 + \angle EAC$,
 即 $\angle BAC = \angle EAD$.

在 $\triangle ABC$ 和 $\triangle AED$ 中,
 $\begin{cases} \angle B = \angle AED, \\ AB = AE, \\ \angle BAC = \angle EAD, \end{cases}$
 $\therefore \triangle ABC \cong \triangle AED$ (ASA).
 $\therefore BC = ED$.

17. 证明: $\because BE = CF$,
 $\therefore BE + EF = CF + EF$,
 即 $BF = CE$.

$\because \angle A = \angle D = 90^\circ$,
 $\therefore \triangle ABF$ 和 $\triangle DCE$ 是直角三角形.

在 $\text{Rt}\triangle ABF$ 和 $\text{Rt}\triangle DCE$ 中,
 $\begin{cases} BF = CE, \\ AB = DC, \end{cases}$
 $\therefore \text{Rt}\triangle ABF \cong \text{Rt}\triangle DCE$ (HL).
 $\therefore \angle AFB = \angle DEC$.

18. 解: (1) $\because \triangle ABC \cong \triangle DEB$,
 $\therefore BE = BC = 3, DE = AB$.
 $\because AE = 2$,
 $\therefore AB = AE + BE = 2 + 3 = 5$.
 $\therefore DE = AB = 5$.

(2) $\because \triangle ABC \cong \triangle DEB$,
 $\therefore \angle D = \angle A = 35^\circ, \angle DBE = \angle C = 50^\circ$.
 $\therefore \angle AFD = \angle A + \angle AEF, \angle AEF = \angle D + \angle DBE$,
 $\therefore \angle AFD = \angle A + \angle D + \angle DBE = 35^\circ + 35^\circ + 50^\circ = 120^\circ$.

四、解答题(二)

19. 解: $\because \angle CMD = 90^\circ$,

$\therefore \angle CMA + \angle BMD = 90^\circ$.

$\because \angle A = \angle B = 90^\circ$,
 $\therefore \angle CMA + \angle ACM = 90^\circ$.
 $\therefore \angle ACM = \angle BMD$.

在 $\triangle ACM$ 和 $\triangle BMD$ 中,

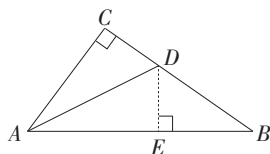
$\begin{cases} \angle A = \angle B, \\ \angle ACM = \angle BMD, \\ CM = MD, \end{cases}$
 $\therefore \triangle ACM \cong \triangle BMD$ (AAS).
 $\therefore BM = AC = 3$ m.

$\therefore AM = AB - BM = 12 - 3 = 9$ (m).

$\therefore 9 \div 2 = 4.5$ (s).

\therefore 他还需要 4.5 s 才能到达 A 处.

20. 解: 如图, 过点 D 作 $DE \perp AB$ 于点 E .



(第20题图)

$\because AD$ 平分 $\angle BAC, DE \perp AB, DC \perp AC$,
 $\therefore DC = DE$.

又 $BD : DC = 2 : 1, BC = 12$ cm,

$\therefore DC = 12 \times \frac{1}{3} = 4$ (cm).

$\therefore DE = DC = 4$ cm.

$\therefore S_{\triangle ABD} = \frac{1}{2} AB \cdot DE = \frac{1}{2} \times 16 \times 4 = 32$ (cm²).

21. 解: (1) 2.

(2) 证明: 在 $\text{Rt}\triangle BCD$ 和 $\text{Rt}\triangle BED$ 中,
 $\begin{cases} BD = BD, \\ DC = DE, \end{cases}$
 $\therefore \text{Rt}\triangle BCD \cong \text{Rt}\triangle BED$ (HL).
 $\therefore BC = BE$.

(3) $\because \triangle AED$ 的周长是 4 cm,
 $\therefore AE + DE + AD = 4$ cm.

$\therefore DE = DC$,

$\therefore AE + DC + AD = 4$ cm,

即 $AC + AE = 4$ cm.

$\therefore AC = 3$ cm,

$\therefore AE = 1$ cm.

$\therefore BE = BC = 4$ cm,

$\therefore AB = BE + AE = 4 + 1 = 5$ (cm).

五、解答题(三)

22. 证明: (1) $\because AB \parallel DF$,
 $\therefore \angle B = \angle F$.

$\because AC \parallel DE$,

$\therefore \angle ACB = \angle DEF$.

$\because BE = CF$,

$\therefore BE + EC = CF + EC$, 即 $BC = FE$.

在 $\triangle ABC$ 和 $\triangle DFE$ 中,

$\begin{cases} \angle ACB = \angle DEF, \\ BC = FE, \\ \angle B = \angle F, \end{cases}$
 $\therefore \triangle ABC \cong \triangle DFE$ (ASA).
 $\therefore AC = DE$.

(2) $\because \triangle ABC \cong \triangle DFE$,

$\therefore AC = DE$.

在 $\triangle ACO$ 和 $\triangle DEO$ 中,

$\begin{cases} \angle AOC = \angle DOE, \\ \angle ACB = \angle DEF, \\ AC = DE, \end{cases}$

$\therefore \triangle ACO \cong \triangle DEO$ (AAS).
 $\therefore EO = CO$.

$\because BE = CF$,

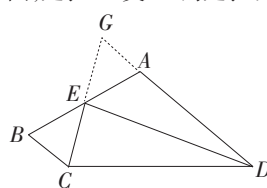
$\therefore BE + EO = CF + CO$, 即 $BO = FO$.

\therefore 点 O 为 BF 的中点.

23. 解: (1) $1 < AD < 6$.

(2) $CD = AD + BC$. 理由如下:

如图, 延长 CE 交 DA 的延长线于点 G .



(第23题图)

$\because AD \parallel BC$,

$\therefore \angle G = \angle ECB$.

$\because E$ 是 AB 的中点,

$\therefore AE = BE$.

在 $\triangle AEG$ 和 $\triangle BEC$ 中,

$\begin{cases} \angle G = \angle ECB, \\ \angle AEG = \angle BEC, \\ AE = BE, \end{cases}$

$\therefore \triangle AEG \cong \triangle BEC$ (AAS).

$\therefore AG = BC, EG = EC$.

$\because CE \perp DE$,

$\therefore \angle DEG = \angle DEC = 90^\circ$.

在 $\triangle DEG$ 和 $\triangle DEC$ 中,

$\begin{cases} DE = DE, \\ \angle DEG = \angle DEC, \\ EG = EC, \end{cases}$

$\therefore \triangle DEG \cong \triangle DEC$ (SAS).

$\therefore DG = DC$.

$\therefore DG = AD + AG = AD + BC$,

$\therefore CD = AD + BC$.

第7期

2版

13.1.1 轴对称

1. D

2. A

3. ①③④⑧⑩, ②⑤⑦⑨

13.1.2 线段的垂直平分线的性质

第1课时

1. B

2. 解: (1) $\because DM$ 是线段 AB 的垂直平分线,

$\therefore DA = DB$. 同理, $EA = EC$.

$\therefore \triangle ADE$ 的周长为 5 cm,

$\therefore AD + DE + EA = 5$ cm.

$\therefore BC = DB + DE + EC = AD + DE + EA = 5$ (cm).

(2) $\because \triangle OBC$ 的周长为 13 cm,

$\therefore OB + OC + BC = 13$ cm.

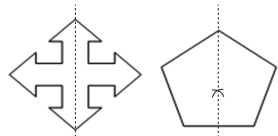
$\because OM$ 垂直平分 $AB, \therefore OA = OB$.

同理, $OA = OC. \therefore 2OA + BC = 13$ cm.

$\therefore OA = \frac{1}{2} \times (13 - 5) = 4$ (cm).

第2课时

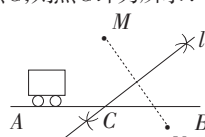
1. 解: 如图所示.



(第1题图)

2. 解: 如图, (1) 连接 MN ;

(2) 作线段 MN 的垂直平分线 l , 交直线 AB 于点 C , 则点 C 即为所求.

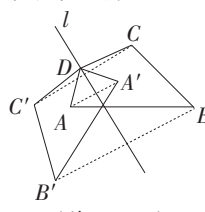


(第2题图)

13.2 画轴对称图形

1. B

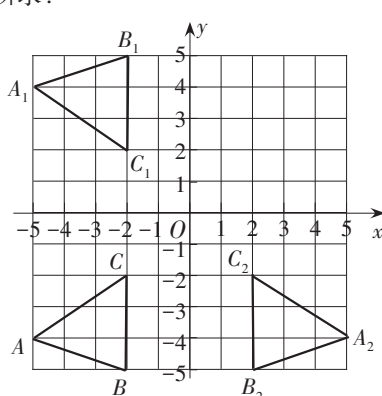
2. 解: 如图, 四边形 $A'B'C'D$ 即为所求.



(第2题图)

3. D

4. 解: (1) 如图所示, $\triangle A_1B_1C_1$ 即为所求.



(第4题图)

(2) 如图所示, $\triangle A_2B_2C_2$ 即为所求.

3~4版

一、选择题

1~5. BACCC

二、填空题

11~5

13. $(-3, 0)$

15. 5

三、解答题(一)

16. 解: \because 四边形 $ABDC$ 的对称轴是

AD 所在的直线,

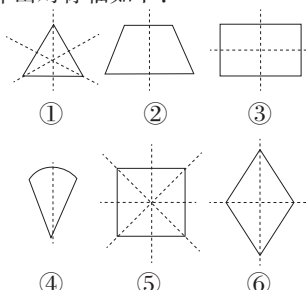
$\therefore \triangle ACD \cong \triangle ABD$.

$\therefore AB = AC = 5, CD = BD = 7$.

\therefore 四边形 $ABDC$ 的周长为 $2 \times 5 + 2 \times 7 = 24$.

17. 解: $(2, 5)$ 关于 x 轴对称的点是 $(2, -5)$, 关于 y 轴对称的点是 $(-2, 5)$; $(-7, 11)$ 关于 x 轴对称的点是 $(-7, -11)$, 关于 y 轴对称的点是 $(7, 11)$; $(3, -2)$ 关于 x 轴对称的点是 $(3, 2)$, 关于 y 轴对称的点是 $(-3, -2)$; $(-4, -7)$ 关于 x 轴对称的点是 $(-4, 7)$, 关于 y 轴对称的点是 $(4, -7)$; $(5, 0)$ 关于 x 轴对称的点是 $(5, 0)$, 关于 y 轴对称的点是 $(-5, 0)$.

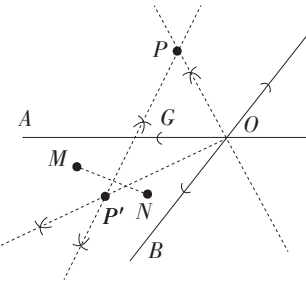
18. 解: ①②③④⑤⑥都是轴对称图形. 作出对称轴如下:



(第18题图)

四、解答题(二)

19. 解: 如图所示, 点 P, P' 即为仓库的位置.



(第19题图)

20. 解: \because 点 P 关于 OA 的对称点 Q 恰好落在线段 MN 上, 点 P 关于 OB 的对称点 R 落在 MN 的延长线上,
 $\therefore PM = MQ, PN = NR$.
 $\therefore PM = 2.5$ cm, $PN = 3$ cm, $MN = 4$ cm,
 $\therefore RN = 3$ cm, $MQ = 2.5$ cm, $NQ = MN - MQ = 4 - 2.5 = 1.5$ (cm).
 $\therefore QR = RN + NQ = 3 + 1.5 = 4.5$ (cm).

21. 解: (1) $\because \angle BAC = 50^\circ, AD$ 平分 $\angle BAC$,

$\therefore \angle EAD = \frac{1}{2} \angle BAC = 25^\circ$.

$\because DE \perp AB, \therefore \angle AED = 90^\circ$.

$\therefore \angle EDA = 90^\circ - 25^\circ = 65^\circ$.

(2) 证明: $\because DE \perp AB$,

$\therefore \angle AED = 90^\circ = \angle ACB$.

$\because AD$ 平分 $\angle BAC$,

$\therefore \angle DAE = \angle DAC$.

又 $AD = AD$,

$\therefore \triangle AED \cong \triangle ACD$.

$\therefore AE = AC, DE = DC$.

\therefore 点 A, D 均在线段 CE 的垂直平分线上.

\therefore 直线 AD 是线段 CE 的垂直平分线.

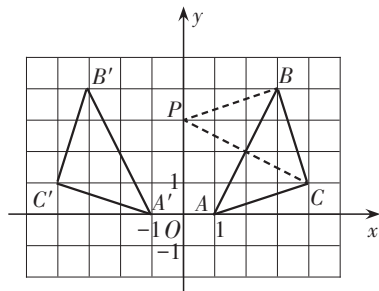
五、解答题(三)

22. 解: (1) 如图, $\triangle A'B'C'$ 即为所求.

(2) $A'(-1, 0), B'(-3, 4), C'(-4, 1)$.

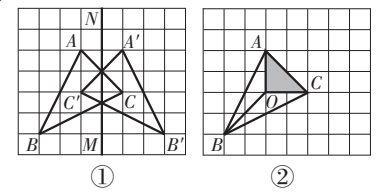
(3) 若 $\triangle PAB \cong \triangle CAB$, 则 $BP = BC$, 如图, 利用网格找点 C 关于 AB 的对称点 P ,

\therefore 点 P 的坐标为 $(0, 3)$.



(第22题图)

23. 解: (1) 如图①, $\triangle A'B'C'$ 即为所求.



(第23题图)

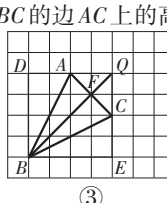
(2) 答案不唯一, 如图②.

(3) 如图③, 选择格点 D, E , 证明 $\triangle ABD \cong \triangle CBE$. 于是得 $AB = CB$.

选择格点 Q , 证明 $\triangle ABQ \cong \triangle CBQ$.

于是得 $AQ = CQ$.

所以 BQ 为线段 AC 的垂直平分线. 设 BQ 与 AC 相交于点 F , 则 BF 为所求作的 $\triangle ABC$ 的边 AC 上的高.



(第23题图)

第8期

2版

13.3.1 等腰三角形

第1课时

1. B

2. C

第2课时

1. D

2. 解: (1) $\because DE$ 垂直平分 AB ,
 $\therefore DB = DA. \therefore \angle B = \angle DAB$.
 $\because \angle B = 40^\circ, \therefore \angle DAB = \angle B = 40^\circ$.