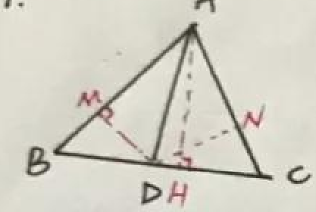
硚口区 八 年级 数学 期中考试答案（第 1 页）

一.选择题:

1~5：CDCBA，6~10：CDABB

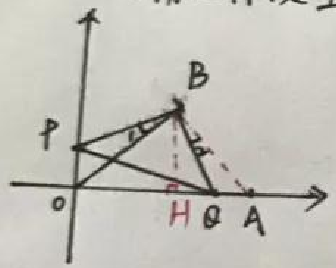
9.



$\frac{S_{\triangle ABD}}{S_{\triangle ACD}}=\frac{AB}{AC}=\frac{BD}{CD}=\frac{9}{6}=\frac{3}{2}$

$\therefore CD=\frac{2}{5}BC=4.$

10、"对角互补模型"易证：①、②、③正确．④错误．



连AB. $\because \angle POQ=90^\circ$ $\angle PBQ=90^\circ$

$\therefore \angle BPO+\angle BQO=180^\circ$

又 $\because \angle BQA+\angle BQO=180^\circ$

$\therefore \angle BPO=\angle BQA$

$\Rightarrow \triangle BPO \cong \triangle BQA(SAS)$

$\therefore BO=BA$，$\angle 1=\angle 2$

$\therefore \angle OBA=\angle PBQ=90^\circ$

$\therefore \triangle BOA$ 为等腰直角三角形，

过B作BH⊥x轴于H

$\therefore OH=BH=AH=\frac{1}{2}OA=4$

$\therefore$ ①中：$OP+OQ=OA=8$（对）

②中：B(4,4)（对）

③中：$S_{四}=S_{\triangle OBA}=\frac{1}{2}\times4\times8=16$（对）

④中：$PQ\geq OB$（错）

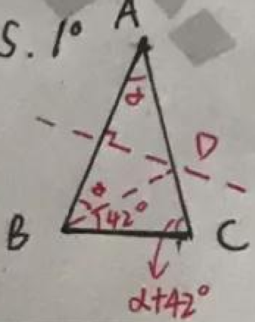
（当BQ⊥OA，即四边形POQB为正方形时取等）．

二.填空题:

11. 2　12. 9　13. 8

14. 80°　15. 32°或88°或152°　16. 180°-2α

15. 1°

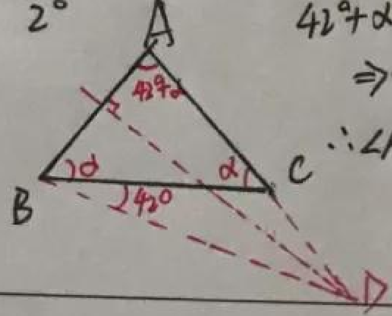


$\alpha+(\alpha+42^\circ)\times2=180^\circ$

$\Rightarrow \alpha=32^\circ$

$\therefore \angle A=32^\circ$

2°



$42^\circ+\alpha+2\alpha=180^\circ$

$\Rightarrow \alpha=46^\circ$

$\therefore \angle A=88^\circ$

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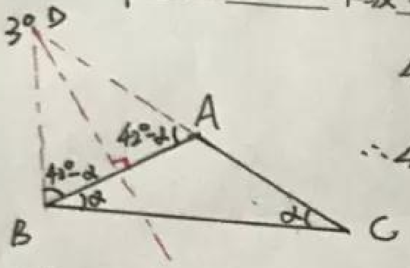
硚口区 八 年级 数学 期中考试答案（第 2 页）

15. 3°



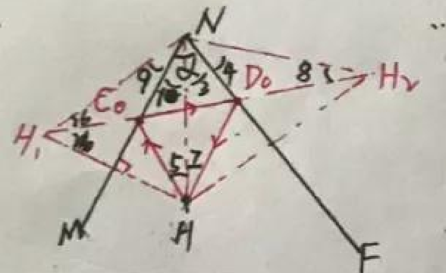
$42^\circ-\alpha=2\alpha$

$\Rightarrow \alpha=14^\circ$

$\therefore \angle A=180^\circ-2\alpha=152^\circ$

综上：$\angle BAC=32^\circ$ 或 88° 或 152°

16.



"将军饮马"问题：

过H作MN对称点H_1，作关于NF对称点H_2

连H_1H_2分别交MN、NF于C_0、D_0即为所求.

$\therefore NH=NH_1=NH_2$

且$\angle 9=\angle 10$，$\angle 3=\angle 4$，$\angle 5=\angle 6$，$\angle 7=\angle 8$

$\therefore \angle H_1NH_2=2\alpha$ $\therefore \angle C_0HD_0=\angle 6+\angle 7=180^\circ-2\alpha$.

即：$\angle 2=180^\circ-2\alpha$.

三、解答题：

17. 解：∵外角和为360°

∴内角和为$3\times360^\circ=1080^\circ$

设边数为n

$\therefore (n-2)\cdot180^\circ=1080^\circ \Rightarrow n=8$.

18. 证明：∵$FB=CE$

$\therefore BC=EF$

$\Rightarrow \triangle ABC\cong\triangle DEF$ (SSS)

$\therefore \angle B=\angle E$

$\therefore AB\parallel DE$.

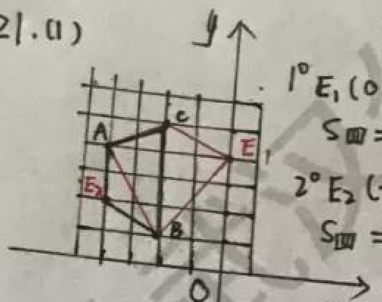
硚口区 八 年级 数学 期中考试答案（第 3 页）

19.(1) 设$\angle A=\alpha$
$\because CE=EA$
$\therefore \angle ACE=\alpha$
$\because$ CE平分$\angle ACB$
$\therefore \angle ACB=2\alpha$
$\because AB=AC$
$\therefore \angle ABC=2\alpha$
$\therefore \alpha+2\alpha+2\alpha=180^\circ$
$\Rightarrow \alpha=36^\circ$ $\therefore \angle A=36^\circ$

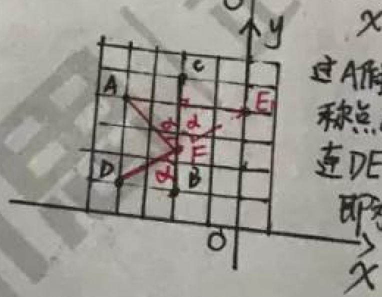
(2). $\because BD\perp AC$
$\therefore \angle 1=\angle CFD$
由(1)知：$\angle ACE=\alpha=36^\circ$
$\therefore \angle 1=90^\circ-36^\circ=54^\circ$

20. 证明：
易证：$\triangle ABD\cong\triangle BAC$(HL)
$\therefore \angle EAB=\angle EBA$
$\therefore EA=EB$.

21.(1)

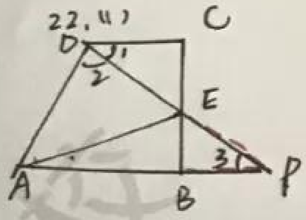


1° $E_1(0,4)$
$S_{四}=8$
2° $E_2(-4,2)$
$S_{四}=6$



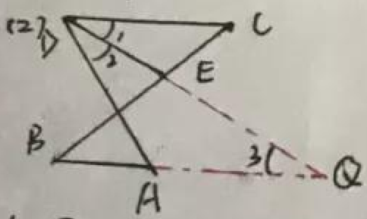
过A作关于BC对称点(0,4)
连DE交BC于F.
即为所求

22.(1)



证明：如图：延长DE交AB延长线于点P.
易证：$\triangle DEC\cong\triangle PEB$(AAS)
$\therefore \angle 1=\angle 3$, $DE=EP$
$\because \angle 1=\angle 2$
$\therefore \angle 2=\angle 3$
又$\because DE=EP$
$\therefore$ AE平分$\angle DAB$

(2)



如图：延长DE交BA延长线于Q.
$\therefore \angle 1=\angle 3=\angle 2$
$\therefore DA=AQ$
$\therefore BQ=CD$
$\Rightarrow \triangle DCE\cong\triangle QBE$(AAS)
$\therefore EB=EC$.

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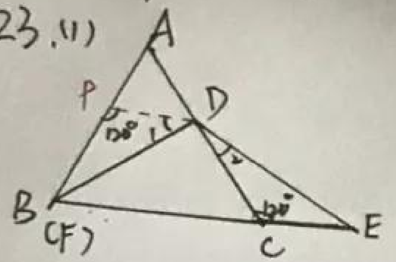
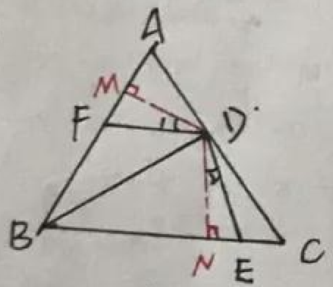
硚口区八年级数学期中考试答案(第4页).

23.(1)



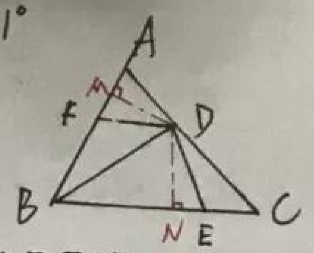
证明：如图.过D作DP∥BC交AB于P
∴△ADP为等边三角形
∴PD=DA=DC，∠PDC=120°
∴∠1=∠2
∴△PDB≌△CDE(ASA)
∴BD=DE

(2)



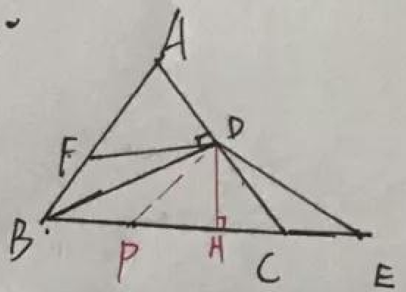
∵D为AC中点.
∴BD平分∠ABC
过D作DM⊥AB交AB于M.
过D作DN⊥BC交BC于N
∴DM=DN，∠MDN=120°
∴∠1=∠2
∴△DMF≌△DNE(ASA)
∴FM=NE
∴BF+BE=2BM
设AC=4a
∴AB=4a，AD=2a
∵∠A=60°
∴∠ADM=30°
∴AM=a
∴BM=3a
∴$\frac{BE+BF}{AC}=\frac{6a}{4a}=\frac{3}{2}$

(3) 1°



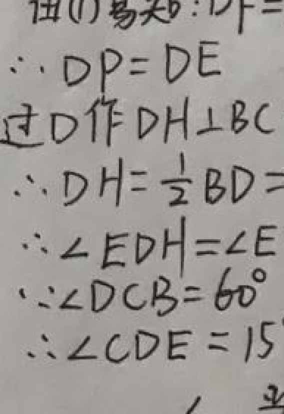
当E、F都在线段上时.
由(2)易知：CE+AF=AM+CN=2AM=AD
∵AD≠BD
∴不成立

2°



当F在AB上、E在BC延长线上时
在BC上取BP=BF ∴AF=CP
∴AF+CE=PE=BD
易证：△DBF≌△DBP(SAS)
∴DF=DP
由(1)易知：DF=DE(辅助线一样)
∴DP=DE
过D作DH⊥BC交BC于H.
∴DH=$\frac{1}{2}$BD=$\frac{1}{2}$PE=PH=EH
∴∠EDH=∠E=45°
∵∠DCB=60°
∴∠CDE=15°

3°



当F在BA延长线上
E在BC上时
同理可证：∠APD=45°
∴∠PDB=∠EDB=15°
∴∠EDC=75°

综上所述：∠EDC=15°或75°

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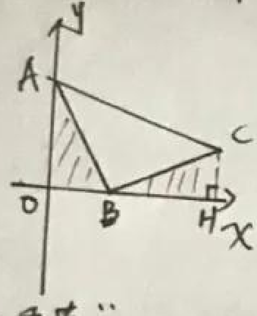
24.(1)



"三垂直"

如图，过C作$CH\perp x$轴交x轴于H.

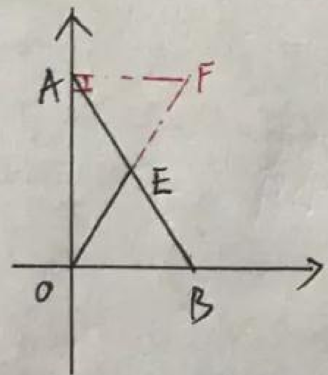
易证：$\triangle AOB \cong \triangle BHC(AAS)$

$\therefore AO=BH=4.\ OB=CH=3$

$\therefore OH=7$

$\therefore C(7,3)$.

(2)



如图：延长OE到F，使EF=OE，连AF

$\Rightarrow \triangle OBE \cong \triangle FAE(SAS)$

$\therefore AF=OB,\ \angle F=\angle EOB$

$\therefore AF\parallel OB$

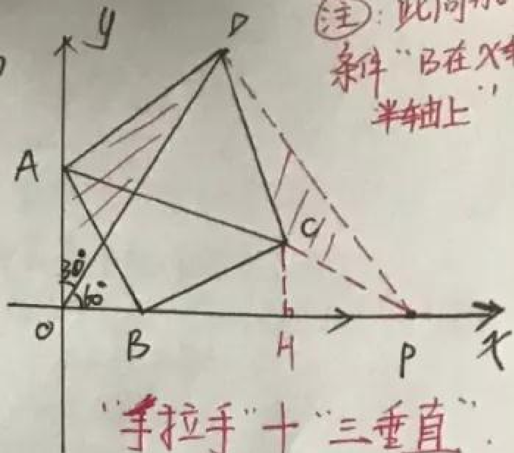
$\therefore \angle FAO+\angle AOB=180^\circ$

$\therefore \angle FAO=90^\circ$

$\therefore \triangle FAO \cong \triangle BOA(SAS)$

$\therefore OF=AB=2OE$.

(3)



注：此问加一个条件"B在x轴正半轴上"

"手拉手"＋"三垂直"

如图：在x轴上取一点P，使OP=OD

连CP，DP

$\because \angle AOD=30^\circ$

$\therefore \angle DOP=60^\circ$

$\therefore \triangle DOP$为等边三角形

又$\because \triangle ADC$为等边三角形

易证：$\triangle AOD \cong \triangle CPD(SAS)$

$\therefore CP=AO=4,\ \angle CPD=\angle AOD=30^\circ$

$\therefore \angle CPB=60^\circ-30^\circ=30^\circ$

过C作$CH\perp x$轴，交x轴于H点.

$\therefore CH=2$

易证：$\triangle AOB \cong \triangle BHC(AAS)$

$\therefore OB=CH=2$

$\therefore B(2,0)$

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