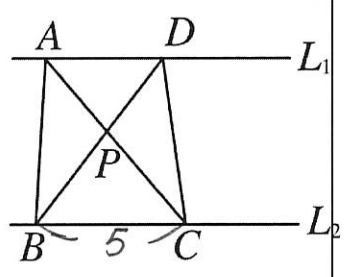
國八下 數學科 週末作業 4-1 平行線與截角性質(1)　108/05/24

班級:　　座號:　　姓名:

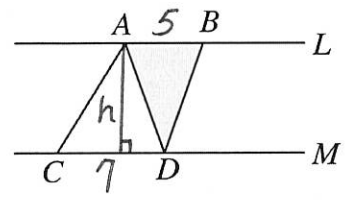
1. 如圖，$L_1 // L_2$，如果 $\overline{BC}=5$公分，
△ABC的面積為15平方公分，則下列何者一定正確？

✓（A）△DBC的面積為15 cm^2
（B）△APD的面積＝△BPC的面積
（C）△ACD的面積為15 cm^2
（D）△ABP的面積為7.5 cm^2



答: A

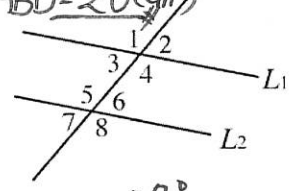
2. 如圖，L//M，A、B在L上，C、D在M上，$\overline{AB}=5$cm，
$\overline{CD}=7$cm，如果△ACD的面積為28平方公分，
求△ABD的面積。



解:
$\frac{7\times h}{2}=28$　∵ L//M
$h=8$　∴ 等高
$\triangle ABD=\frac{5\times 8}{2}=20(cm^2)$ ✱

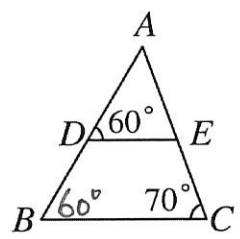
$\triangle ACD:\triangle ABD=\overline{CD}:\overline{AB}$
$\Rightarrow 28:\triangle ABD=7:5$
$\Rightarrow \triangle ABD=20(cm^2)$

3. 如右圖，$L_1 // L_2$，則
(1) ∠3 的同位角為 ∠7
(2) ∠3 的內錯角為 ∠6
(3) ∠3 的同側內角為 ∠5
(4) 若∠2＝57°，則∠5= 123°，∠7= 57°



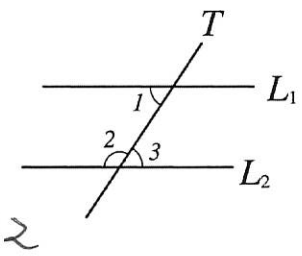
∠6=∠2=57°
∠5=180°-57°=123° ✱
∠7=∠6=57° ✱

4. 如圖，△ABC 中，$\overline{DE}//\overline{BC}$，如果
∠ADE＝60°，∠C＝70°，則∠A＝?



$\because \overline{DE}//\overline{BC}$
$\therefore \angle B=\angle ADE=60°$
$\Rightarrow \angle A=180°-60°-70°$
$=50°$ ✱

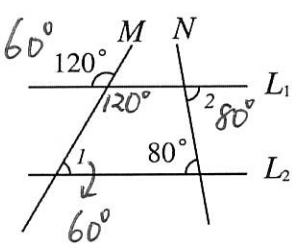
5. 如圖，$L_1 // L_2$，直線T為其截線，
∠1＝（5x－3）°，∠2＝（10x＋3）°
，則∠3＝?



$\because L_1 // L_2$
$\therefore \angle 1+\angle 2=180°$
$5X-3+10X+3=180$
$15X=180$ → $X=12$
$\angle 3=\angle 1=57°$ ✱

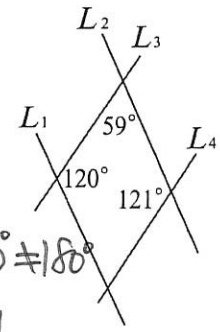
6. $L_1 // L_2$，M、N是截線，下列何者為真？
✗（A）∠1＞∠2
✗（B）∠2＝100°
✓（C）∠2－∠1＜30°
✗（D）∠1＋∠2＞150°。

答: C



∠1=180°-120°=60°
∠2=80°

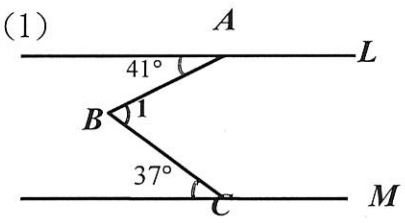
7. 如圖，請問哪兩條直線互相平行？



答: $L_3 // L_4$
∵ 59°+121°=180°
∴ $L_3 // L_4$
∵ 59°+120°≠180°
∴ $L_1 \nparallel L_2$

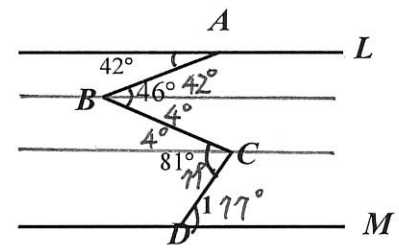
8. 如下圖，$L // M$，分別求出兩小題的∠1＝?

(1)



∠1=41°+37°
=78° ✱

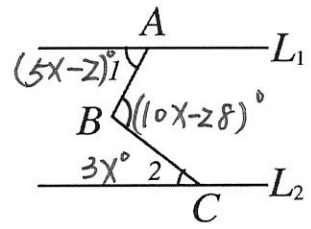
(2)



42°+81°=46°+∠1
∠1=77° ✱
另解: 46-42=4
81-4=77 ⇒∠1=77° ✱

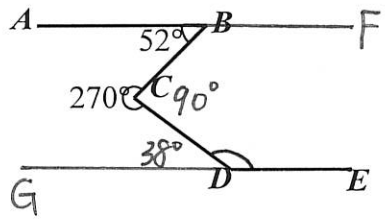
9. 如圖，$L_1 // L_2$，如果∠1＝（5x－2）°，∠2＝3x°，
∠B＝（10x－28）°，求(1) x=? (2) ∠2=?

(1) ∵ $L_1 // L_2$
∴ 5X-2+3X=10X-28
8X-2=10X-28
X=13



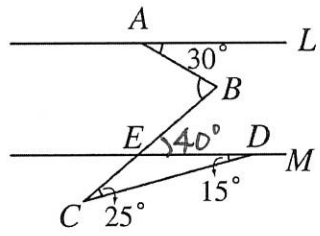
(2) ∠2=3×13°
=39° ✱

10. 如圖，已知 $\overline{AB} // \overline{DE}$，求∠CDE



∠BCD=360°-270°
=90°
∠CDG=90°-52°
=38°
⇒ ∠CDE=180°-38°=142° ✱

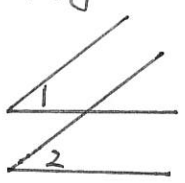
11. 如圖，L//M，則∠B=?



∠BED是△CDE外角
∴∠BED=25°+15°
=40°
⇒ ∠B=30°+40°
=70° ✱

12. $\angle 1=(4x-12)^\circ$、$\angle 2=(2x+6)^\circ$，若$\angle 1$和$\angle 2$的兩邊互相平行，求$\angle 1$、$\angle 2$ (請嘗試把$\angle 1$、$\angle 2$的圖形畫出來)

(1) 相等



$\angle 1=24^\circ$

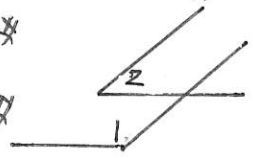
$\angle 2=24^\circ$

$\because \angle 1=\angle 2$

$\therefore 4X-12=2X+6$

$X=9$

(2) 互補



$\because \angle 1+\angle 2=180^\circ$

$\therefore 4X-12+2X+6=180$

$6X=186$

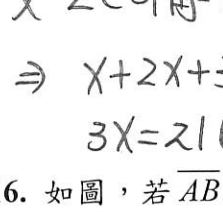
$X=31$

$\angle 1=112^\circ$

$\angle 2=68^\circ$

13. 若$\angle A=70^\circ$，且$\angle B$的兩邊分別和$\angle A$的兩邊垂直，則$\angle B=?$（請嘗試將$\angle A\angle B$的圖形畫出來）

(1) 互補

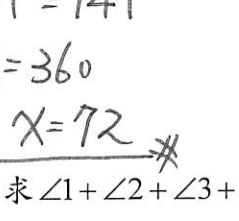


$\because \angle A+\angle B=180^\circ$

$\therefore \angle B=180^\circ-70^\circ$

$=110^\circ$

(2) 相等



$\because \angle A=\angle B$

$\therefore \angle B=70^\circ$

14. 如圖，$\angle A=120^\circ$，$\angle ABD=60^\circ$，$\angle C=40^\circ$，$\angle D=65^\circ$，則(1) $\angle BEF=?$ (2) $\angle AFE=?$

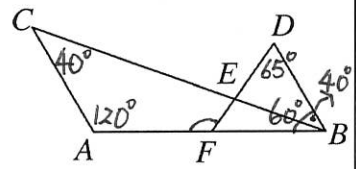
(1) $\because \angle A+\angle ABD=180^\circ$

$\therefore \overline{AC}\parallel\overline{BD}$

$\Rightarrow \angle DBE=\angle C=40^\circ$

$\Rightarrow \angle BEF=40^\circ+65^\circ$

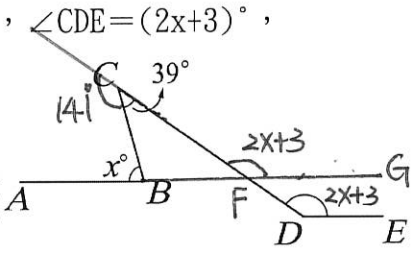
$=105^\circ$



(2) $\angle AFE=60^\circ+65^\circ$

$=125^\circ$

15. 如圖，$\overline{AB}//\overline{DE}$，$\angle ABC=x^\circ$，$\angle CDE=(2x+3)^\circ$，$\angle BCD=39^\circ$則$x=?$



$\because \overleftrightarrow{AB}\parallel\overleftrightarrow{DE}$

$\therefore \angle CFG=\angle CDE=(2X+3)^\circ$

又 $\angle C$外角$=180^\circ-39^\circ=141^\circ$

$\Rightarrow X+2X+3+141=360$

$3X=216 \Rightarrow X=72$

16. 如圖，若$\overline{AB}//\overline{GF}$，求$\angle 1+\angle 2+\angle 3+\angle 4+\angle 5=?$

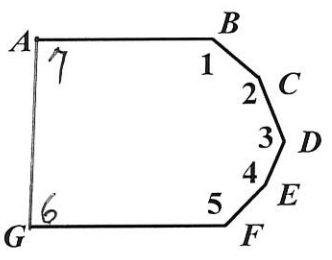
$\because \overline{AB}\parallel\overline{GF}$

$\therefore \angle 6+\angle 7=180^\circ$

$\Rightarrow \angle 1+\angle 2+\angle 3+\angle 4+\angle 5$

$=(7-2)\times 180^\circ-180^\circ$

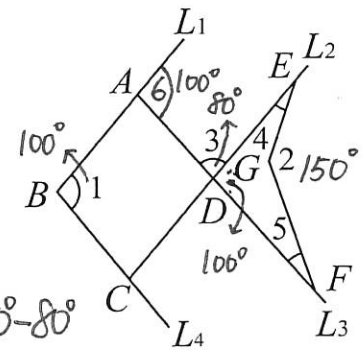
$=720^\circ$



17. 小彬畫了一條熱帶魚，如圖所示，已知$L_1//L_2$、$L_3//L_4$，且$\angle 1=100^\circ$，$\angle 2=150^\circ$，則：

(1) $\angle 3=?$

(2) $\angle 4+\angle 5=?$



(1) $\because L_3//L_4$

$\therefore \angle 6=\angle 1=100^\circ$

$\because L_1//L_2$

$\therefore \angle 3=180^\circ-100^\circ$

$=80^\circ$

(2) $\angle EDF=180^\circ-80^\circ$

$=100^\circ$

$\Rightarrow \angle 4+\angle 5+100^\circ=150^\circ$

$\Rightarrow \angle 4+\angle 5=50^\circ$

18. 如圖，$\overline{AD}$平分$\angle BAC$，$\overline{AE}//\overline{BC}$，且$\angle B=52^\circ$，$\angle ADB=102^\circ$，求$\angle EAC$

$\angle BAD=180^\circ-52^\circ-102^\circ$

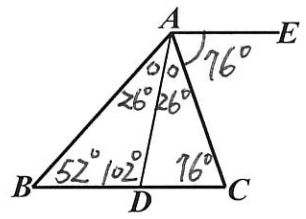
$=26^\circ$

$\angle C=180^\circ-52^\circ-52^\circ$

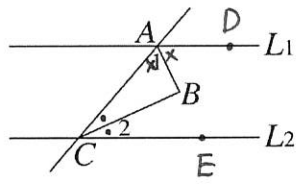
$=76^\circ$

$\because \overline{AE}//\overline{BC}$

$\therefore \angle EAC=\angle C=76^\circ$



19. 如右圖，$L_1//L_2$，$\overline{AB}$與$\overline{BC}$是一組同側內角的角平分線若$\angle 1=(4x+4)^\circ$，$\angle 2=(3x-5)^\circ$，則 (1) $\angle ABC=?$ (2) $x=?$



(1) $\angle 1=\frac{1}{2}\angle DAC$

$\angle 2=\frac{1}{2}\angle ACE$

$\Rightarrow \angle 1+\angle 2=\frac{1}{2}(\angle DAC+\angle ACE)$

$=\frac{1}{2}\times 180^\circ=90^\circ$

$\Rightarrow \angle ABC=180^\circ-90^\circ$

$=90^\circ$

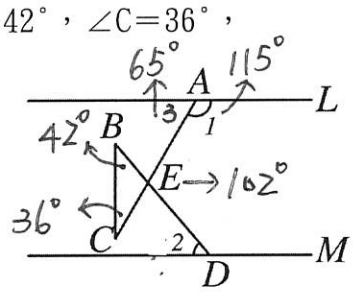
(2) $\because \angle 1+\angle 2=90^\circ$

$\therefore 4X+4+3X-5=90$

$7X=91$

$X=13$

20. 如圖，L//M，$\angle 1=115^\circ$，$\angle B=42^\circ$，$\angle C=36^\circ$，則$\angle 2=?$



$\angle AED=\angle BEC$

$=180^\circ-36^\circ-42^\circ$

$=102^\circ$

$\angle 3=180^\circ-115^\circ$

$=65^\circ$

$\angle 2+65^\circ=102^\circ$

$\Rightarrow \angle 2=37^\circ$