

fRf“fsf...[]f^,ÉfCf“fXfg[]f<,³,è,Ä,ç,éfQ[]f€ fRf“fgf[]f%o,â^ê—•\Ž!,³,è,Ü,·[]BfRf“fgf[]f%o,ìfefXfg[]A\  
[]-[]A,Ü,½,í[]Ä²[]®,ð[]s,π,É,í[]A,»,ìfRf“fgf[]f%o,ð'!ð,μ[]A[fv[]pfefB] ,ðfNfŠfbfN,μ,Ü,·[]B

[fQ[f€ fRf"fgf[f%o] f{fbfNfX,î^ê—,É•\Ži,³,ê,Ä,ç,éî•ñ,ªXV,³,ê,Ü,·B

□V,μ,ϕfQ□[f€ fRf“fgf□□[f%o,đ'Ç%oÁ,·,é,Æ,«,ÉfNfŠfbfN,μ,Ü,·□B

'l'đ,μ,½fQ□[f€ fRf"fgf□□[f%o,đ□í□œ,·,é,Æ,«,ÉfNfŠfbfN,μ,Û,·□B

□Ú□×□Ý'è,ð•\Ž|,·,é,Æ,«,ÉfNfŠfbfN,μ,Ü,·□B—D□æfffofCfX,ð'l'ð,·,é,±,Æ,ª,Å,«,Ü,·□B

,±,İfQ□[f€ fRf“fgf□□[f%o,İfefXfg,Ü,½,Í²□©,đ□s,α,Æ,«,ÉfNfŠfbfN,μ,Ü,·□B

fgf%ofuf<fVf...[]fefBf“fO,đ<N“®,:.é,Æ,«,ÉfNfŠfbfN,μ,Ü,.□B

fRf“fgf□□[f% ID ,ÆŠe ID ,ÉCE»□ÝŠ,,,è“- ,Ä,ç,ê,Ä,ç,éfQ□[f€ fRf“fgf□□[f%□A,“ ,æ,ÑfQ□[f€ fRf“fgf□□[f%  
,³fCf“fXfg□[f<,³,ê,Ä,ç,éf]□[fg,ì^ê—,ª•\Ž|,³,ê,Ü,·□B



,±,ìfffofCfX,É'í,μ,Ä»'ϕϵ³'ñ<ÿ,ìvf[]fpfefB fV[]lfg,ð~—p,Å,«,é,±,Æ,ðŽ!,μ,Ü,·□BfvfXfef€  
,ìŠù'è'l,ðŽg,ϣ□ê□‡,Í`fFbfN f{fbfNfX,ðfift,É,μ,Ü,·□B

'l'ö,µ,½fQ□[f€ fRf"fgf□□[f%o,ÉŠ,,è"-,Ä,ç,è,Ä,ç,é ID ,ð•í□X,·,é,Æ,«,ÉfNfŠfbfN,µ,Ü,·□B

fQ[f€ fRf“fgf[f%o,ÉŠ,,è“-,Ä,éfQ[f€ f[fq,đ,±,ì^ê—,©,ç‘l,Ñ,Ü,·B

fQ[f€ fRf“fgf[f%o,²A[2 f{f^f“,ìtf%ofCfƒ f^ [fN] ,È,Ç,ìŽí—p•ÊA,“,æ,Ñ [Microsoft SideWinder  
(Ž©“®Œÿo)] ,È,Ç,ì»•i-¼•Ê,Ê^ê—•\Ž,³,ê,Ü,·BŽg—p,·,éfQ[f€ fRf“fgf[f%o,ì»•i-¼,²^ê—,Ê•\  
Ž,³,ê,éê‡,íA^ê—,©,ç»•i-¼,đ‘,Ñ,Ü,·B

fQ[f€ fRf“fgf[f%o,ì»•i-¼,Ü,½,ìŽí—p,²^ê—,Ê,È,çê‡,íA[ft[fU[‘è<`] ,đfNfŠfbfN,μ,ĀfQ[f€  
fRf“fgf[f%o,đì¬,·,é,©A,±,ìffofCfX,Ê‘,·,éfhf%ofCfo f\ftfƒEƒfA,đfCf“fXfg[f<,μ,Ü,·B

[fn][fhfEjFfA,ì'Ç%ÁfEfBfU[fh] ,đŠ),,Æ,«,ÉfNfŠfbfN,μ,Ü,·BfCf“fXfg[f< fffBfXfN,ª, ,éê±,íA,±  
,ìfEfBfU[fh,ÅfQ[f€ fRf“fgf[f%o,ìfhf%ofCfo,đfCf“fXfg[f<,Å,«,Ü,·B

fCf“fXfg□[f< fffBfXfN,<sup>a</sup>,È,□AfQ□[f€ fRf“fgf□□[f%<sup>a</sup>, [fQ□[f€ fRf“fgf□□[f%<sup>oo</sup>] f{fbfNfX,ì^è—,É•\  
Ž,<sup>3</sup>,è,È,¢□è□‡,í□AfNfŠfbfN,μ,ÄfQ□[f€ fRf“fgf□□[f%<sup>oo</sup>,ì“Á□«,ðŽw’è,μ,Û,·□B

fQ[f€ fRf“fgf[f%„iŽ²,i“„,đŽ!,μ,Ü,·B’ÉíA2 Ž²,ìQ[f€ fRf“fgf[f%„íAã%°¶%E,É“®„©„,±  
,Æ,ª,À,«,·B,Ü,½A3 Ž²,ìQ[f€ fRf“fgf[f%„É,íAfXfbfgf< fRf“fgf[f<ª•t,ç,Ä,ç,Ü,·B4 Ž²,ìQ[f€  
fRf“fgf[f%„É,íAfXfbfgf<Æf%f\_[]ª•t,ç,Ä,ç,Ü,·B

'æ 3 Ž²,af%of\_[]l,Ü,½,íyf\_f<,Å, ,é,±,Æ,đŽ!,μ,Ü,·[]B



'æ 3 Ž²,ª Z Ž²,Å, ,é,±,Æ,đŽ!,µ,Û,·□B

fQ[f€ fRf“fgf[f%o,lf{f^f“,i□”,đŽw’è,μ,Û,·□B

q<ó<@,í^[]fN,Ü,½,íXfefBfbfN,đVf~f...f[]fg,·,é,æ,α,ÉÝv,³,ê,Ä,ç,éRf“fgf[]f%°,ª, ,é,±  
,Æ,đŽ,ι,μ,·,□B

f^bf` ffbfCefNfVf#fif< fRf“fgf□□[f%°,ª, ,é,±,Æ,đŽ!,μ,Û,·□B’Ê□í□A,±,ìfRf“fgf□□[f%°,É,Í{f^f“,ª 2 □` 4  
CEÀ, ,è,Û,·□B

fRf“fgf□□lf%°,afXfefAfŠf“fO fzfC□lf<,Å, ,é,±,Æ,đŽ!,μ,Û,·□B

fQ[f€ fRf“fgf[f%œ,ÉŽ<ŠE,ì∅,è’Ö,¡<@”\ (POV) ,â’•”ô,³,ê,Ä,ç,é,±,Æ,ðŽ!,μ,Û,·∅BPOV ,ðŽg—p,·,é,Æ∅A  
%œ-Êã,ìfjufWfFfNfg,ð•\Ž!,·,é^Ê’u,Û,½,Í•ûCEü,ðŽw’è,·,é,±,Æ,³,Ä,«,Û,·∅B

“ÆŽ ©, ìfQ [f€ fRf“ fgf [f%o, ì-¼‘O, ð“ü—í, ·, éêŠ, Å, ·B, ±, ì-¼‘O, íA fRf“ fsf... [f^, ÉfCf“ fXfg [f<, ³, ê, Ä, †  
, é— ~ —p%oÅ“\, ÉfRf“ fgf [f%o, ì^ê—, É•\Ž, ³, ê, Ü, ·B

fRf“fgf□□lf%°,afWf#fCfXfefBfbfN,Å, ,é,±,Æ,đŽ!,μ,Ü,·□B



[fQ[f€ fRf“fgf□□[f%o] f{fbfNfX,ì^ê—,É•\Ži,³,ê,éfRf“fgf□□[f%o-¼,ÉŠ,,è“-,Ä,éfRf“fgf□□[f%o ID  
,đ'đ,μ,Û,·□B

fQ[f€ ,É,æ,Á,Ä,Í□A fRf“fgf□□[f%o ID 1 ,ÉfQ[f€ fRf“fgf□□[f%o,đŠ,,è“-,Ä,é•K—v,ª, ,è,Û,·□B

'l'đ,μ,½fRf"fgf□□[f%o ID ,<sup>a</sup>•\Ž!,<sup>3</sup>,ê,Ü,·□B,±,ì ID ,ÉfQ□[f€ fRf"fgf□□[f%o,đŠ,,è"-,Ä,é,É,í□A[fQ□[f€  
fRf"fgf□□[f%o] f{fbfNfX,î^ê—,ìfRf"fgf□□[f%o-¼,đfNfŠfbfN,μ,Ü,·□B

—~—p%oÁ“\,ÈfQ□[f€ fRf“fgf□□[f%o,â^ê—•\Ž!,³,ê,Ü,·□B□]—^,ìfAfvfŠfP□[fVf†f“,Å—  
D□æfffofCfX,É,·,éfRf“fgf□□[f%o,đfNfŠfbfN,μ□A[OK],đfNfŠfbfN,μ,Ü,·□B

Žg—p,·,éfQ□[f€ fRf“fgf□□[f%o,Éf%of\_□[,Ü,½,Ífyf\_f<,ª, ,é,±,Æ,đŽ!,μ,Ü,·□B,Ü,½,Í□A□Ú‘±,μ,½f  
%of\_□[,Ü,½,Ífyf\_f<,ª—LÆø,É,È,è,Ü,·□B

fffofCfX,ìRf“fgf□□[f<,đŠù’è’l,ÉfŠfZfbfg,μ,Û,·□BUSB fRf“fgf□□[f%  
,ìê□†,í□AfffofCfXŽ©’ì,ÉŠî,Ā,«□Ý’è’l,ªŽæ“¾,³,è,Û,·□B,Ù,©,ìRf“fgf□□[f%  
p,É%ž,¶,½”Ä—p,ì□Ý’è’l,ªŽg,í,è,Û,·□B

[fffofCfX,ì'²@fEfBfU[fh] ,đ·N“® ,·,é,Æ,«,ÉfNfŠfbfN,μ,Û,·□B,±,ìfEfBfU[fh,É,æ,Á,Ä□AfQ□[f€ fRf“fgf□□[f  
%o,ìŽ²,ì“®□ì”í^í,đ□Ý'è,μ,Û,·□B

“®”í^í,đfefXfg,;é,Æ,«,ÉŽg,č,Ü,·BfefXfg f{fbfNfX,ì 4 <÷,ì,č,,é,©,É“í,©,È,čê†,íAfQ[f€  
fRf“fgf[f%o,đÄ’²®μ,Ä,,¾,³,čB

“®”í^í,đfefXfg,;é,Æ,«,ÉŽg,č,Ü,·BfefXfg f{fbfNfX,ìä%º,É“í,©,È,čé†,íAfQ[f€ fRf“fgf[f%º  
,đÄ²@,μ,Ä,,¾,³,čB



fQ[f€ fRf“fgf[f%„É•t,ç,Ä,ç,éŽ<ŠE,ìØ,è‘Ö,¡<@“\ (POV) ,ðfefXfg,·,é,Æ,«„ÉŽg,ç,Û,·BPOV ,í 4  
,Ä,Û,ÄfefXfg,Ä,«„Û,·BPOV ,ìF,í 1 “Ö-Ú,ªÖF A2 “Ö-Ú,ªÄF A3 “Ö-Ú,ª•F A4 “Ö-Ú,ª—  
ìF,Ä,·B³í,É%ž“š,µ,È,çê‡,íA[fgf%ufj·Vf...[fefBf“fO] f{f^f“,ðNfŠfbfN,µ,Ä-â‘è,ì%ðĈ^•û-  
@,ð²,x,Û,·B

fQ[f€ fRf“fgf[f%„,lf{f^f“,ðfefXfg,μ,Û,·BfefXfg,·,é,É,íAf{f^f“,ð 1 ,Â,„,Â  
%„ÿ,μ,Û,·Bf{f^f“”Ôt,ìš,,,è“-,Ä,íAfQ[f€ fRf“fgf[f%„,ì»‘t€³,É,æ,Á,Ä€^è,³,è,Û,·B

