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 Conversion Factors For Production Traits. Source: INTERBULL 2004
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = PCORR2*Foreign Reliability

breed	country2	amilk	bmilk	afat	bfat	aprot	bprot	pcorr2
AYS	AUS	310.50	1.1270	21.600	1.2120	17.200	1.2430	0.4761
AYS	CAM	-580.98	1.1204	-31.752	0.9167	-19.755	1.3608	0.7921
AYS	DEU	536.10	0.8170	37.400	0.8660	26.300	0.8520	0.8100
AYS	DFS	-4490.70	54.1000	-164.900	2.0880	-117.800	1.6080	0.7921
AYS	EST	734.20	1.0920	27.500	1.1050	30.100	1.0360	0.6889
AYS	GBR	-259.60	2.1270	-13.400	2.6440	-7.700	2.4540	0.6889
AYS	IRL	616.68	2.8527	21.575	2.6346	25.436	2.5426	0.5625
AYS	LTU	-655.40	1.6390	-14.400	1.3880	-14.200	1.7850	0.6889
AYS	LVA	439.00	1.7430	19.300	1.7480	20.700	1.9100	0.6724
AYS	NLD	1483.49	0.6896	57.486	0.7168	52.001	0.5583	0.7569
AYS	NOR	-3668.60	43.6950	-150.700	1.7690	-103.400	1.3550	0.7744
AYS	NZL	-213.10	1.5400	20.300	1.4930	10.700	1.6740	0.4761
AYS	USA	-214.60	0.8270	-14.700	0.8650	-7.900	0.8480	0.7921
AYS	ZAF	-94.74	0.8163	-9.217	0.9678	-3.007	0.8962	0.6561

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 Conversion Factors For SCS Traits. Source: INTERBULL 2004
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = SCORR2*Foreign Reliability

breed	country2	a	b	scorr2
AYS	AUS	96.600	-16.9270	0.7396
AYS	CAM	14.958	0.8111	0.8836
AYS	DEU	61.600	0.3690	0.8649
AYS	DFS	59.600	0.4090	0.8836
AYS	EST	56.600	0.4160	0.7921
AYS	GBR	99.100	-0.4620	0.8649
AYS	LTU	96.500	-12.7590	0.8100
AYS	LVA	95.700	-11.5440	0.8100
AYS	NLD	-24.527	1.2586	0.8281
AYS	NOR	63.200	0.3600	0.8464
AYS	NZL	93.500	-12.9550	0.7396
AYS	USA	169.900	-23.6160	0.8464
AYS	ZAF	98.880	-0.2004	0.7921

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 Conversion Factors For Type. Source = INTERBULL MACE 2004
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = TCORR2*Foreign Reliability

country2=AUS

c c f
 a o o
 n u r a b t

b	t	n	t	v	v	c
r	r	t	r	a	a	o
e	a	r	a	l	l	r
e	i	y	i	u	u	r
d	t	2	t	e	e	2

AYS	CONFORMATION	AUS	CONFORMATION	-6.075	4.6204	0.3
7						
AYS	FEET AND LEGS	AUS	OVERALL FEET & LEG	-37.894	0.3230	
AYS	MAMMARY SYSTEM	AUS	OVERALL UDDER SCORE	-5.894	5.9066	
AYS	STATURE	AUS	STATURE	-4.725	9.0300	
AYS	CHEST WIDTH	AUS	CHEST WIDTH	2.008	12.9730	
AYS	BODY DEPTH	AUS	BODY DEPTH	-1.177	11.5750	
AYS	PIN WIDTH	AUS	RUMP WIDTH	-2.544	13.0399	
AYS	RUMP ANGLE	AUS	RUMP ANGLE	-1.342	13.1921	
AYS	FOOT ANGLE	AUS	FOOT ANGLE	-2.037	14.2043	
AYS	REAR LEGS SIDE VIEW	AUS	REAR LEG SET	3.746	18.9229	
AYS	REAR LEG REAR VIEW	AUS	REAR LEG REAR VIEW	-3.045	12.5000	
AYS	UDDER DEPTH	AUS	UDDER DEPTH	-4.871	10.0997	
AYS	MEDIAN SUSPENSORY	AUS	MEDIAN SUSPENSORY	-4.088	11.1328	
AYS	FORE ATTACHMENT	AUS	FORE UDDER	-4.655	9.6442	
AYS	TEAT PLACEMENT	AUS	FRONT TEAT PLACEMENT	-1.515	9.3461	
AYS	TEAT LENGTH	AUS	TEAT LENGTH	1.589	9.9066	
AYS	REAR ATTACHMENT HEIGHT	AUS	REAR UDDER HEIGHT	-8.286	8.8932	
AYS	REAR TEAT PLACEMENT	AUS	REAR TEAT PLACEMENT	-2.636	14.3878	
AYS	ANGULARITY	AUS	ANGULARITY	-6.877	9.5317	

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 Conversion Factors For Type. Source = INTERBULL MACE 2004
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = TCORR2*Foreign Reliability

country2=CAM

b	c	c	f			
r	a	o	o			
e	n	u	r	a	b	t
	t	n	t	v	v	c
	r	t	r	a	a	o
	a	r	a	l	l	r

e d	i t	y 2	i t	u e	u e	r 2
AYS	CONFORMATION		CAM CONFORMATION	-9.206	0.7553	0.7
4						
AYS	FEET AND LEGS		CAM OVERALL FEET & LEG	-6.618	0.6036	
AYS	MAMMARY SYSTEM		CAM OVERALL UDDER SCORE	-10.034	0.7480	
AYS	STATURE		CAM STATURE	-5.218	0.9659	
AYS	CHEST WIDTH		CAM CHEST WIDTH	-1.138	0.8512	
AYS	BODY DEPTH		CAM BODY DEPTH	-3.421	1.0442	
AYS	PIN WIDTH		CAM RUMP WIDTH	-4.191	0.8230	
AYS	RUMP ANGLE		CAM RUMP ANGLE	0.484	1.0265	
AYS	FOOT ANGLE		CAM FOOT ANGLE	-2.617	0.6199	
AYS	REAR LEGS SIDE VIEW		CAM REAR LEG SET	3.560	0.8354	
AYS	REAR LEG REAR VIEW		CAM REAR LEG REAR VIEW	-5.158	0.7016	
AYS	UDDER DEPTH		CAM UDDER DEPTH	-4.993	1.1116	
AYS	MEDIAN SUSPENSORY		CAM MEDIAN SUSPENSORY	-5.290	0.7224	
AYS	FORE ATTACHMENT		CAM FORE UDDER	-7.682	0.7080	
AYS	TEAT PLACEMENT		CAM FRONT TEAT PLACEMENT	-3.178	0.7683	
AYS	TEAT LENGTH		CAM TEAT LENGTH	1.438	0.6316	
AYS	REAR ATTACHMENT HEIGHT		CAM REAR UDDER HEIGHT	-8.928	0.7836	
AYS	REAR TEAT PLACEMENT		CAM REAR TEAT PLACEMENT	-2.915	0.9334	
AYS	ANGULARITY		CAM ANGULARITY	-9.218	0.7576	

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Conversion Factors For Type. Source = INTERBULL MACE 2004
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=DEU

b r e e d	c a n t r y 2	c o u n t r y 2	f o r e i g n c o u n t r y 2	a v e r a g e	b v a r i a n c e	t c o r r e c t i o n
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AYS	FEET AND LEGS	DEU	OVERALL FEET & LEG	-29.980	0.2932
AYS	MAMMARY SYSTEM	DEU	OVERALL UDDER SCORE	-32.173	0.2973
AYS	STATURE	DEU	STATURE	-43.487	0.4501
AYS	CHEST WIDTH	DEU	CHEST WIDTH	-51.614	0.5280
AYS	BODY DEPTH	DEU	BODY DEPTH	-54.009	0.5425
AYS	PIN WIDTH	DEU	RUMP WIDTH	-54.906	0.5707
AYS	RUMP ANGLE	DEU	RUMP ANGLE	-67.817	0.6377
AYS	FOOT ANGLE	DEU	FOOT ANGLE	-33.387	0.3595
AYS	REAR LEGS SIDE VIEW	DEU	REAR LEG SET	-63.097	0.6150
AYS	REAR LEG REAR VIEW	DEU	REAR LEG REAR VIEW	-52.970	0.5476
AYS	UDDER DEPTH	DEU	UDDER DEPTH	-43.392	0.4298
AYS	MEDIAN SUSPENSORY	DEU	MEDIAN SUSPENSORY	-43.445	0.4214
AYS	FORE ATTACHMENT	DEU	FORE UDDER	-45.936	0.4350
AYS	FRONT TEAT PLACEMENT	DEU	FRONT TEAT PLACEMENT	-40.669	0.3944
AYS	TEAT LENGTH	DEU	TEAT LENGTH	-34.647	0.3306
AYS	REAR ATTACHMENT HEIGHT	DEU	REAR UDDER HEIGHT	-38.066	0.3345
AYS	REAR TEAT PLACEMENT	DEU	REAR TEAT PLACEMENT	-44.365	0.4123
AYS	ANGULARITY	DEU	ANGULARITY	-46.383	0.4469

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 Conversion Factors For Type. Source = INTERBULL MACE 2004
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = TCORR2*Foreign Reliability

country2=DFS

	c	c	f			
	a	o	o		a	b
	n	u	r		v	v
b	t	n	t		a	a
r	r	t	r		l	l
e	a	r	a		u	u
e	i	y	i		e	e
d	t	2	t			2
AYS	CONFORMATION	DFS	OVERALL CONFORMATION	-45.413	0.3813	0.5
8						
AYS	FEET AND LEGS	DFS	OVERALL FEET & LEG	-38.860	0.3575	
AYS	MAMMARY SYSTEM	DFS	OVERALL UDDER SCORE	-47.491	0.4385	

AYS	STATURE	DFS	STATURE	-72.528	0.7074
AYS	CHEST WIDTH	DFS	CHEST WIDTH	-46.633	0.4754
AYS	BODY DEPTH	DFS	BODY DEPTH	-48.540	0.4473
AYS	PIN WIDTH	DFS	RUMP WIDTH	-54.398	0.5343
AYS	RUMP ANGLE	DFS	RUMP ANGLE	-56.886	0.5724
AYS	FOOT ANGLE	DFS	FOOT ANGLE	-52.053	0.5186
AYS	REAR LEGS SIDE VIEW	DFS	REAR LEG SET	-62.476	0.6681
AYS	REAR LEG REAR VIEW	DFS	REAR LEG REAR VIEW	-52.958	0.5099
AYS	UDDER DEPTH	DFS	UDDER DEPTH	-50.437	0.5048
AYS	MEDIAN SUSPENSORY	DFS	MEDIAN SUSPENSORY	-37.956	0.3402
AYS	FORE ATTACHMENT	DFS	FORE UDDER	-41.855	0.3980
AYS	FRONT TEAT PLACEMENT	DFS	FRONT TEAT PLACEMENT	-43.844	0.4362
AYS	TEAT LENGTH	DFS	TEAT LENGTH	-42.594	0.4194
AYS	REAR ATTACHMENT HEIGHT	DFS	REAR UDDER HEIGHT	-53.339	0.4707
AYS	REAR TEAT PLACEMENT	DFS	REAR TEAT PLACEMENT	-47.408	0.4545
AYS	ANGULARITY	DFS	ANGULARITY	-69.149	0.6209

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Conversion Factors For Type. Source = INTERBULL MACE 2004
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=GBR

	c	c	f			
	a	o	o			
	n	u	r	a	b	t
b	t	n	t	v	v	c
r	r	t	r	a	a	o
e	a	r	a	l	l	r
e	i	y	i	u	u	r
d	t	2	t	e	e	2
AYS	FEET AND LEGS	GBR	OVERALL FEET & LEG	-2.882	2.9852	
AYS	MAMMARY SYSTEM	GBR	OVERALL UDDER SCORE	-1.384	3.0267	
AYS	STATURE	GBR	STATURE	-2.855	4.6691	
AYS	CHEST WIDTH	GBR	CHEST WIDTH	1.443	3.9403	

AYS	BODY DEPTH	GBR	BODY DEPTH	0.120	3.3901
AYS	PIN WIDTH	GBR	RUMP WIDTH	-0.979	4.0936
AYS	RUMP ANGLE	GBR	RUMP ANGLE	-1.866	3.7295
AYS	FOOT ANGLE	GBR	FOOT ANGLE	-1.694	2.9250
AYS	REAR LEGS SIDE VIEW	GBR	REAR LEG SET	-0.397	3.4992
AYS	UDDER DEPTH	GBR	UDDER DEPTH	-0.325	2.9176
AYS	MEDIAN SUSPENSORY	GBR	MEDIAN SUSPENSORY	-1.570	2.6568
AYS	FORE ATTACHMENT	GBR	FORE UDDER	0.226	3.0894
AYS	TEAT PLACEMENT	GBR	FRONT TEAT PLACEMENT	1.857	3.1959
AYS	TEAT LENGTH	GBR	TEAT LENGTH	-0.762	3.2107
AYS	REAR ATTACHMENT HEIGHT	GBR	REAR UDDER HEIGHT	-2.601	3.5629
AYS	ANGULARITY	GBR	ANGULARITY	-5.913	5.3788

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Conversion Factors For Type. Source = INTERBULL MACE 2004
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=NLD

	c	c	f			
	a	o	o		a	b
	n	u	r		v	v
b	t	n	t		a	a
r	r	t	r		l	l
e	a	r	a		u	u
e	i	y	i		e	e
d	t	2	t			2
AYS	CONFORMATION	NLD	CONFORMATION	-129.006	1.3571	0.5
8						
AYS	FEET AND LEGS	NLD	OVERALL FEET & LEG	-60.783	0.6022	
AYS	MAMMARY SYSTEM	NLD	OVERALL UDDER SCORE	-112.861	1.1971	
AYS	STATURE	NLD	STATURE	-122.223	1.3671	
AYS	CHEST WIDTH	NLD	CHEST WIDTH	-121.958	1.3192	
AYS	BODY DEPTH	NLD	BODY DEPTH	-109.255	1.2220	
AYS	PIN WIDTH	NLD	RUMP WIDTH	-89.315	0.9614	
AYS	RUMP ANGLE	NLD	RUMP ANGLE	-99.288	0.9876	
AYS	FOOT ANGLE	NLD	FOOT ANGLE	-99.251	1.0408	

AYS	REAR LEGS SIDE VIEW	NLD	REAR LEG SET	-117.156	1.1368
AYS	REAR LEG REAR VIEW	NLD	REAR LEG REAR VIEW	-118.933	1.2114
AYS	UDDER DEPTH	NLD	UDDER DEPTH	-116.965	1.2361
AYS	MEDIAN SUSPENSORY	NLD	MEDIAN SUSPENSORY	-103.393	1.0567
AYS	FORE ATTACHMENT	NLD	FORE UDDER	-119.958	1.2428
AYS	TEAT PLACEMENT	NLD	FRONT TEAT PLACEMENT	-108.838	1.1487
AYS	TEAT LENGTH	NLD	TEAT LENGTH	-81.475	0.8321
AYS	REAR ATTACHMENT HEIGHT	NLD	REAR UDDER HEIGHT	-97.259	1.0313
AYS	REAR TEAT PLACEMENT	NLD	REAR TEAT PLACEMENT	-104.114	1.0794
AYS	ANGULARITY	NLD	ANGULARITY	-108.563	1.2014

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Conversion Factors For Type. Source = INTERBULL MACE 2004
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=NOR

	c	c	f			
	a	o	o		a	b
	n	u	r		v	v
b	t	n	t		a	a
r	r	t	r		l	l
e	a	r	a		u	u
e	i	y	i		e	e
d	t	2	t			2
AYS	CONFORMATION	NOR	OVERALL CONFORMATION	-46.524	0.3796	0.7
AYS	FEET AND LEGS	NOR	OVERALL FEET & LEG	-33.005	0.2605	
AYS	MAMMARY SYSTEM	NOR	OVERALL UDDER SCORE	-50.602	0.4117	
AYS	STATURE	NOR	STATURE	-51.784	0.4447	
AYS	CHEST WIDTH	NOR	CHEST WIDTH	-34.447	0.3920	
AYS	BODY DEPTH	NOR	BODY DEPTH	-38.651	0.3489	
AYS	PIN WIDTH	NOR	RUMP WIDTH	-37.419	0.3845	
AYS	RUMP ANGLE	NOR	RUMP ANGLE	-44.923	0.4643	
AYS	FOOT ANGLE	NOR	FOOT ANGLE	-33.888	0.3226	
AYS	REAR LEGS SIDE VIEW	NOR	REAR LEG SET	-37.233	0.4199	

AYS	REAR LEG REAR VIEW	NOR	REAR LEG REAR VIEW	-35.981	0.3229
AYS	UDDER DEPTH	NOR	UDDER DEPTH	-49.681	0.4321
AYS	MEDIAN SUSPENSORY	NOR	MEDIAN SUSPENSORY	-40.114	0.3312
AYS	FORE ATTACHMENT	NOR	FORE UDDER	-43.496	0.3699
AYS	FRONT TEAT PLACEMENT	NOR	FRONT TEAT PLACEMENT	-45.512	0.4142
AYS	TEAT LENGTH	NOR	TEAT LENGTH	-36.009	0.3533
AYS	REAR ATTACHMENT HEIGHT	NOR	REAR UDDER HEIGHT	-48.222	0.3661
AYS	REAR TEAT PLACEMENT	NOR	REAR TEAT PLACEMENT	-39.712	0.3762

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Conversion Factors For Type. Source = INTERBULL MACE 2004
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=NZL

	c	c	f			
	a	o	o		a	b
	n	u	r		v	v
b	t	n	t		a	a
r	r	t	r		l	l
e	a	r	a		u	u
e	i	y	i		e	e
d	t	2	t			2
AYS	CONFORMATION	NZL	OVERALL CONFORMATION	-8.825	11.0041	0.3
7						
AYS	MAMMARY SYSTEM	NZL	OVERALL UDDER SCORE	-9.970	11.6866	
AYS	STATURE	NZL	STATURE	-12.155	11.9877	
AYS	CHEST WIDTH	NZL	CHEST WIDTH	1.375	13.7238	
AYS	BODY DEPTH	NZL	BODY DEPTH	-1.790	12.1033	
AYS	PIN WIDTH	NZL	RUMP WIDTH	-4.686	16.4988	
AYS	RUMP ANGLE	NZL	RUMP ANGLE	-5.863	19.8443	
AYS	REAR LEGS SIDE VIEW	NZL	REAR LEG SET	5.053	36.5526	
AYS	MEDIAN SUSPENSORY	NZL	MEDIAN SUSPENSORY	-6.005	12.3330	
AYS	FORE ATTACHMENT	NZL	FORE UDDER	-7.582	12.0974	
AYS	FRONT TEAT PLACEMENT	NZL	FRONT TEAT PLACEMENT	-5.278	18.2826	
AYS	REAR ATTACHMENT HEIGHT	NZL	REAR UDDER HEIGHT	-8.570	12.8612	
AYS	REAR TEAT PLACEMENT	NZL	REAR TEAT PLACEMENT	-5.604	17.4388	

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 Conversion Factors For Type. Source = INTERBULL MACE 2004
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = TCORR2*Foreign Reliability

country2=USA

	c a n t r e e d	c o u n t r y 2	f o r e i g n	a d j u s t e d	b o d y u s e d	t e s t r e s t e d
AYS	CONFORMATION	USA	CONFORMATION	-2.032	7.6852	0.6
AYS	FEET AND LEGS	USA	OVERALL FEET & LEG	-2.714	3.1590	
AYS	MAMMARY SYSTEM	USA	OVERALL UDDER SCORE	-0.710	4.9324	
AYS	STATURE	USA	STATURE	0.638	2.6072	
AYS	CHEST WIDTH	USA	CHEST WIDTH	1.180	4.8698	
AYS	BODY DEPTH	USA	BODY DEPTH	0.689	3.6030	
AYS	PIN WIDTH	USA	RUMP WIDTH	0.857	3.9149	
AYS	RUMP ANGLE	USA	RUMP ANGLE	-1.886	3.4991	
AYS	FOOT ANGLE	USA	FOOT ANGLE	-1.318	5.0278	
AYS	REAR LEGS SIDE VIEW	USA	REAR LEG SET	-0.426	6.5268	
AYS	REAR LEG REAR VIEW	USA	REAR LEG REAR VIEW	-1.574	-5.2204	
AYS	UDDER DEPTH	USA	UDDER DEPTH	0.251	4.0489	
AYS	MEDIAN SUSPENSORY	USA	MEDIAN SUSPENSORY	-2.299	3.8541	
AYS	FORE ATTACHMENT	USA	FORE UDDER	-0.359	3.4631	
AYS	TEAT PLACEMENT	USA	FRONT TEAT PLACEMENT	-0.232	3.4477	
AYS	TEAT LENGTH	USA	TEAT LENGTH	0.855	2.7749	
AYS	REAR ATTACHMENT HEIGHT	USA	REAR UDDER HEIGHT	-1.181	3.4771	
AYS	REAR TEAT PLACEMENT	USA	REAR TEAT PLACEMENT	0.224	3.9549	
AYS	ANGULARITY	USA	ANGULARITY	-0.562	5.0384	

CALCULATION OF FAT% AND PROTEIN% FOR APRIL 2020

BREED	BMILK	BFAT	BPRT
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AYS	7954	332	270
BSW	8543	365	305
CN	6174	262	221
GUE	6981	334	244
JER	6880	354	267
HOL	10563	416	343
MS	7056	274	233

$$EBVFAT\% = 200 * [(BFAT+EBVFAT*0.5) / (BMILK+EBVMILK*0.5) - (BFAT/BMILK)]$$

$$EBVPROT\% = 200 * [(BPRT+EBVPRT*0.5) / (BMILK+EBVMILK*0.5) - (BPRT/BMILK)]$$

EXAMPLE:

A HOLSTEIN bull has EBV MILK=+1000, EBVFAT=+50, EBVPROT=+40

$$\begin{aligned} EBVFAT\% &= 200 * [(416+50*0.5) / (10563+1000*0.5) - (416/10563)] \\ &= 200 * [(416+25) / (10563+500) - (0.03938)] \\ &= 200 * [0.03986 - 0.03938] \\ &= 200 * 0.00048 \\ &= 0.10 \end{aligned}$$

$$\begin{aligned} EBVPROT\% &= 200 * [(343+40*0.5) / (10563+1000*0.5) - (343/10563)] \\ &= 200 * [(343+20) / (10563+500) - (0.03247)] \\ &= 200 * [0.03281 - 0.03247] \\ &= 200 * 0.00034 \\ &= 0.07 \end{aligned}$$