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 Conversion Factors For Production Traits. Source: INTERBULL 2104
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = PCORR2*Foreign Reliability

breed	country2	amilk	bmilk	afat	bfat	aprot	bprot	pcorr2
MSH	AUS	659.70	0.8690	48.800	1.2600	22.200	0.8200	0.5929
MSH	CAN	519.70	0.6050	36.000	0.7330	16.300	0.4730	0.7225
MSH	DEU	905.90	0.5520	71.200	0.8120	32.200	0.4670	0.7225
MSH	DFS	-2512.60	36.4050	-109.400	1.8560	-47.600	0.8750	0.7225
MSH	EST	969.90	0.7750	61.700	1.0120	33.000	0.6380	0.7396
MSH	GBR	244.80	1.5800	21.700	2.4360	10.400	1.5770	0.7225
MSH	IRL	932.60	2.0500	55.054	2.4669	30.255	1.6586	0.6400
MSH	LTU	27.70	1.2440	22.100	1.3810	7.700	1.0980	0.7225
MSH	LVA	816.30	1.2880	53.900	1.6360	28.000	1.1250	0.7225
MSH	NLD	1564.45	0.4987	90.944	0.6879	48.396	0.3696	0.7225
MSH	NOR	-2032.30	31.1420	-96.900	1.6340	-41.600	0.7970	0.7396
MSH	NZL	363.50	1.1090	55.600	1.3580	23.200	0.9960	0.5184
MSH	USA	382.10	0.6080	24.100	0.8100	12.400	0.5030	0.8281
MSH	ZAF	407.57	0.6254	27.825	0.9919	12.853	0.5920	0.7396

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 Conversion Factors For SCS Traits. Source: INTERBULL 2104
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = SCORR2*Foreign Reliability

breed	country2	a	b	scorr2
MSH	AUS	100.700	-21.8190	0.8464
MSH	CAN	1.400	1.0220	0.8464
MSH	DEU	61.700	0.4150	0.8464
MSH	DFS	60.400	0.4490	0.8464
MSH	EST	73.200	0.3070	0.8464
MSH	GBR	102.700	-0.5130	0.8464
MSH	LTU	100.700	-15.0500	0.8281
MSH	LVA	99.900	-13.1410	0.8281
MSH	NLD	-34.736	1.4088	0.8464
MSH	NOR	63.000	0.4080	0.8464
MSH	NZL	97.300	-14.7800	0.7744
MSH	USA	175.500	-24.4940	0.7569
MSH	ZAF	104.241	-0.2294	0.8281

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 Conversion Factors For Type. Source = INTERBULL MACE 2104
 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

MSH	CONFORMATION	AUS	CONFORMATION	3.703	3.7775	0.5
5						
MSH	FEET AND LEGS	AUS	OVERALL FEET & LEG	3.626	7.8161	
MSH	MAMMARY SYSTEM	AUS	OVERALL UDDER SCORE	4.324	3.3321	
MSH	STATURE	AUS	STATURE	0.336	8.4333	
MSH	CHEST WIDTH	AUS	CHEST WIDTH	3.510	12.7392	
MSH	BODY DEPTH	AUS	BODY DEPTH	1.809	8.2299	
MSH	PIN WIDTH	AUS	RUMP WIDTH	2.138	11.8315	
MSH	RUMP ANGLE	AUS	RUMP ANGLE	-1.815	12.6134	
MSH	FOOT ANGLE	AUS	FOOT ANGLE	3.115	21.7596	
MSH	REAR LEGS SIDE VIEW	AUS	REAR LEG SET	-1.007	21.5797	
MSH	REAR LEG REAR VIEW	AUS	REAR LEG REAR VIEW	3.186	27.1532	
MSH	UDDER DEPTH	AUS	UDDER DEPTH	-0.813	7.7365	
MSH	MEDIAN SUSPENSORY	AUS	MEDIAN SUSPENSORY	1.392	14.1247	
MSH	FORE ATTACHMENT	AUS	FORE UDDER	3.666	13.5580	
MSH	TEAT PLACEMENT	AUS	FRONT TEAT PLACEMENT	2.284	11.4277	
MSH	TEAT LENGTH	AUS	TEAT LENGTH	-2.056	13.0330	
MSH	REAR ATTACHMENT HEIGHT	AUS	REAR UDDER HEIGHT	0.284	10.7669	
MSH	REAR TEAT PLACEMENT	AUS	REAR TEAT PLACEMENT	0.634	14.4836	
MSH	ANGULARITY	AUS	ANGULARITY	2.235	12.1150	

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 Conversion Factors For Type. Source = INTERBULL MACE 2104
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = TCORR2*Foreign Reliability

country2=CAN

	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 d	i t	y 2	i t	u e	u e	r 2
MSH	CONFORMATION	CAN	CONFORMATION	6.816	0.7037	0.6
MSH	FEET AND LEGS	CAN	OVERALL FEET & LEG	7.781	0.8621	
MSH	MAMMARY SYSTEM	CAN	OVERALL UDDER SCORE	9.967	0.8785	
MSH	STATURE	CAN	STATURE	5.059	0.8310	
MSH	CHEST WIDTH	CAN	CHEST WIDTH	1.373	0.7257	
MSH	BODY DEPTH	CAN	BODY DEPTH	1.922	0.6653	
MSH	PIN WIDTH	CAN	RUMP WIDTH	5.446	0.9204	
MSH	RUMP ANGLE	CAN	RUMP ANGLE	0.205	0.8772	
MSH	FOOT ANGLE	CAN	FOOT ANGLE	5.288	0.9877	
MSH	REAR LEGS SIDE VIEW	CAN	REAR LEG SET	-1.683	0.7121	
MSH	REAR LEG REAR VIEW	CAN	REAR LEG REAR VIEW	4.243	0.6921	
MSH	UDDER DEPTH	CAN	UDDER DEPTH	3.281	0.7449	
MSH	MEDIAN SUSPENSORY	CAN	MEDIAN SUSPENSORY	4.306	0.8180	
MSH	FORE ATTACHMENT	CAN	FORE UDDER	7.805	0.8747	
MSH	TEAT PLACEMENT	CAN	FRONT TEAT PLACEMENT	3.224	1.0727	
MSH	TEAT LENGTH	CAN	TEAT LENGTH	-3.604	1.3762	
MSH	REAR ATTACHMENT HEIGHT	CAN	REAR UDDER HEIGHT	7.677	0.9031	
MSH	REAR TEAT PLACEMENT	CAN	REAR TEAT PLACEMENT	2.267	0.9134	
MSH	ANGULARITY	CAN	ANGULARITY	7.239	0.7010	

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Conversion Factors For Type. Source = INTERBULL MACE 2104
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 e r a g e	t c o r r e c t i o n
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MSH	FEET AND LEGS	DEU	OVERALL FEET & LEG	-25.759	0.3545
MSH	MAMMARY SYSTEM	DEU	OVERALL UDDER SCORE	-23.002	0.3185
MSH	STATURE	DEU	STATURE	-33.815	0.3939
MSH	CHEST WIDTH	DEU	CHEST WIDTH	-41.035	0.4475
MSH	BODY DEPTH	DEU	BODY DEPTH	-38.924	0.4243
MSH	PIN WIDTH	DEU	RUMP WIDTH	-47.872	0.5513
MSH	RUMP ANGLE	DEU	RUMP ANGLE	-60.428	0.5712
MSH	FOOT ANGLE	DEU	FOOT ANGLE	-34.712	0.4412
MSH	REAR LEGS SIDE VIEW	DEU	REAR LEG SET	-57.388	0.5231
MSH	REAR LEG REAR VIEW	DEU	REAR LEG REAR VIEW	-39.741	0.4822
MSH	UDDER DEPTH	DEU	UDDER DEPTH	-30.410	0.3374
MSH	MEDIAN SUSPENSORY	DEU	MEDIAN SUSPENSORY	-35.464	0.3887
MSH	FORE ATTACHMENT	DEU	FORE UDDER	-37.283	0.4322
MSH	TEAT PLACEMENT	DEU	FRONT TEAT PLACEMENT	-44.347	0.4656
MSH	TEAT LENGTH	DEU	TEAT LENGTH	-56.106	0.4985
MSH	REAR ATTACHMENT HEIGHT	DEU	REAR UDDER HEIGHT	-29.831	0.3479
MSH	REAR TEAT PLACEMENT	DEU	REAR TEAT PLACEMENT	-38.784	0.3842
MSH	ANGULARITY	DEU	ANGULARITY	-36.692	0.4435

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Conversion Factors For Type. Source = INTERBULL MACE 2104
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=DFS

	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
MSH	CONFORMATION	DFS	CONFORMATION	-43.563	0.4562	0.6
6						
MSH	FEET AND LEGS	DFS	OVERALL FEET & LEG	-34.061	0.4029	
MSH	MAMMARY SYSTEM	DFS	OVERALL UDDER SCORE	-43.348	0.5164	

MSH	STATURE	DFS	STATURE	-58.652	0.6156
MSH	CHEST WIDTH	DFS	CHEST WIDTH	-36.597	0.3982
MSH	BODY DEPTH	DFS	BODY DEPTH	-36.266	0.3583
MSH	PIN WIDTH	DFS	RUMP WIDTH	-47.731	0.5201
MSH	RUMP ANGLE	DFS	RUMP ANGLE	-52.055	0.5291
MSH	FOOT ANGLE	DFS	FOOT ANGLE	-64.312	0.6935
MSH	REAR LEGS SIDE VIEW	DFS	REAR LEG SET	-52.279	0.5265
MSH	REAR LEG REAR VIEW	DFS	REAR LEG REAR VIEW	-38.254	0.4356
MSH	UDDER DEPTH	DFS	UDDER DEPTH	-35.686	0.3966
MSH	MEDIAN SUSPENSORY	DFS	MEDIAN SUSPENSORY	-33.929	0.3463
MSH	FORE ATTACHMENT	DFS	FORE UDDER	-38.737	0.4508
MSH	TEAT PLACEMENT	DFS	FRONT TEAT PLACEMENT	-49.074	0.5262
MSH	TEAT LENGTH	DFS	TEAT LENGTH	-70.436	0.6564
MSH	REAR ATTACHMENT HEIGHT	DFS	REAR UDDER HEIGHT	-44.731	0.4746
MSH	REAR TEAT PLACEMENT	DFS	REAR TEAT PLACEMENT	-44.275	0.4429
MSH	ANGULARITY	DFS	ANGULARITY	-59.753	0.6196

Conversion Factors For Type. Source = INTERBULL MACE 2104
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = TCORR2*Foreign Reliability

country2=GBR

	c	c	f			
	a	o	o	a	b	t
	n	u	r	v	v	c
b	t	n	t	a	a	o
r	r	t	r	l	l	r
e	a	r	a	u	u	r
e	i	y	i	e	e	2
d	t	2	t			
MSH	FEET AND LEGS	GBR	OVERALL FEET & LEG	6.550	3.7252	
MSH	MAMMARY SYSTEM	GBR	OVERALL UDDER SCORE	9.985	3.5186	
MSH	STATURE	GBR	STATURE	2.222	4.1857	
MSH	CHEST WIDTH	GBR	CHEST WIDTH	4.722	3.1795	

MSH	BODY DEPTH	GBR	BODY DEPTH	3.272	2.6102
MSH	PIN WIDTH	GBR	RUMP WIDTH	4.416	3.8779
MSH	RUMP ANGLE	GBR	RUMP ANGLE	-1.676	3.4350
MSH	FOOT ANGLE	GBR	FOOT ANGLE	2.649	3.8600
MSH	REAR LEGS SIDE VIEW	GBR	REAR LEG SET	-2.455	2.8676
MSH	UDDER DEPTH	GBR	UDDER DEPTH	2.919	2.3145
MSH	MEDIAN SUSPENSORY	GBR	MEDIAN SUSPENSORY	3.763	2.7426
MSH	FORE ATTACHMENT	GBR	FORE UDDER	8.592	3.3969
MSH	TEAT PLACEMENT	GBR	FRONT TEAT PLACEMENT	5.721	3.9876
MSH	TEAT LENGTH	GBR	TEAT LENGTH	-4.513	4.9722
MSH	REAR ATTACHMENT HEIGHT	GBR	REAR UDDER HEIGHT	6.096	3.7430
MSH	ANGULARITY	GBR	ANGULARITY	3.645	4.1379

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Conversion Factors For Type. Source = INTERBULL MACE 2104
 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
MSH	CONFORMATION	NLD	CONFORMATION	-142.573	1.6085	0.6
7						
MSH	FEET AND LEGS	NLD	OVERALL FEET & LEG	-69.644	0.7955	
MSH	MAMMARY SYSTEM	NLD	OVERALL UDDER SCORE	-115.099	1.3403	
MSH	STATURE	NLD	STATURE	-98.467	1.1467	
MSH	CHEST WIDTH	NLD	CHEST WIDTH	-106.125	1.1807	
MSH	BODY DEPTH	NLD	BODY DEPTH	-85.695	0.9930	
MSH	PIN WIDTH	NLD	RUMP WIDTH	-78.529	0.9007	
MSH	RUMP ANGLE	NLD	RUMP ANGLE	-90.415	0.9028	
MSH	FOOT ANGLE	NLD	FOOT ANGLE	-118.719	1.2973	

MSH	REAR LEGS SIDE VIEW	NLD	REAR LEG SET	-97.448	0.9112
MSH	REAR LEG REAR VIEW	NLD	REAR LEG REAR VIEW	-93.402	1.0182
MSH	UDDER DEPTH	NLD	UDDER DEPTH	-89.801	0.9832
MSH	MEDIAN SUSPENSORY	NLD	MEDIAN SUSPENSORY	-97.196	1.0396
MSH	FORE ATTACHMENT	NLD	FORE UDDER	-112.436	1.2463
MSH	TEAT PLACEMENT	NLD	FRONT TEAT PLACEMENT	-121.987	1.3208
MSH	TEAT LENGTH	NLD	TEAT LENGTH	-130.746	1.2948
MSH	REAR ATTACHMENT HEIGHT	NLD	REAR UDDER HEIGHT	-101.285	1.1738
MSH	REAR TEAT PLACEMENT	NLD	REAR TEAT PLACEMENT	-99.835	1.0572
MSH	ANGULARITY	NLD	ANGULARITY	-98.255	1.1837

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Conversion Factors For Type. Source = INTERBULL MACE 2104
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
MSH	CONFORMATION	NOR	CONFORMATION	-39.172	0.3992	0.6
6						
MSH	FEET AND LEGS	NOR	OVERALL FEET & LEG	-31.187	0.3334	
MSH	MAMMARY SYSTEM	NOR	OVERALL UDDER SCORE	-45.110	0.4601	
MSH	STATURE	NOR	STATURE	-42.022	0.3990	
MSH	CHEST WIDTH	NOR	CHEST WIDTH	-27.752	0.3448	
MSH	BODY DEPTH	NOR	BODY DEPTH	-27.598	0.2751	
MSH	PIN WIDTH	NOR	RUMP WIDTH	-32.511	0.3878	
MSH	RUMP ANGLE	NOR	RUMP ANGLE	-41.576	0.4337	
MSH	FOOT ANGLE	NOR	FOOT ANGLE	-38.694	0.4214	
MSH	REAR LEGS SIDE VIEW	NOR	REAR LEG SET	-35.227	0.3519	

MSH	REAR LEG REAR VIEW	NOR	REAR LEG REAR VIEW	-27.520	0.3061
MSH	UDDER DEPTH	NOR	UDDER DEPTH	-35.600	0.3420
MSH	MEDIAN SUSPENSORY	NOR	MEDIAN SUSPENSORY	-36.526	0.3428
MSH	FORE ATTACHMENT	NOR	FORE UDDER	-38.514	0.4034
MSH	TEAT PLACEMENT	NOR	FRONT TEAT PLACEMENT	-52.862	0.5143
MSH	TEAT LENGTH	NOR	TEAT LENGTH	-59.010	0.5364
MSH	REAR ATTACHMENT HEIGHT	NOR	REAR UDDER HEIGHT	-40.696	0.3778
MSH	REAR TEAT PLACEMENT	NOR	REAR TEAT PLACEMENT	-37.732	0.3821
MSH	ANGULARITY	NOR	ANGULARITY	-45.756	0.4064

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 Conversion Factors For Type. Source = INTERBULL MACE 2104
 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
MSH	CONFORMATION	NZL	CONFORMATION	1.660	14.0496	0.5
5						
MSH	MAMMARY SYSTEM	NZL	OVERALL UDDER SCORE	0.397	14.3298	
MSH	STATURE	NZL	STATURE	-6.548	10.5908	
MSH	CHEST WIDTH	NZL	CHEST WIDTH	4.182	13.4596	
MSH	BODY DEPTH	NZL	BODY DEPTH	2.033	11.3879	
MSH	PIN WIDTH	NZL	RUMP WIDTH	0.225	16.6373	
MSH	RUMP ANGLE	NZL	RUMP ANGLE	-4.764	18.4126	
MSH	REAR LEGS SIDE VIEW	NZL	REAR LEG SET	0.875	35.7479	
MSH	MEDIAN SUSPENSORY	NZL	MEDIAN SUSPENSORY	-0.711	13.8962	
MSH	FORE ATTACHMENT	NZL	FORE UDDER	0.184	13.4324	
MSH	TEAT PLACEMENT	NZL	FRONT TEAT PLACEMENT	-3.408	24.1468	
MSH	REAR ATTACHMENT HEIGHT	NZL	REAR UDDER HEIGHT	0.771	15.9808	

MSH REAR TEAT PLACEMENT NZL REAR TEAT PLACEMENT -2.965 17.2188

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 Conversion Factors For Type. Source = INTERBULL MACE 2104
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = TCORR2*Foreign Reliability

country2=USA

	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
MSH CONFORMATION 7		USA CONFORMATION		7.799	8.3628	0.6
MSH FEET AND LEGS		USA OVERALL FEET & LEG		6.806	4.0001	
MSH MAMMARY SYSTEM		USA OVERALL UDDER SCORE		10.021	5.3616	
MSH STATURE		USA STATURE		4.693	2.2526	
MSH CHEST WIDTH		USA CHEST WIDTH		3.583	4.1175	
MSH BODY DEPTH		USA BODY DEPTH		3.798	3.1677	
MSH PIN WIDTH		USA RUMP WIDTH		5.818	3.8457	
MSH RUMP ANGLE		USA RUMP ANGLE		-1.477	3.1495	
MSH FOOT ANGLE		USA FOOT ANGLE		3.748	5.9247	
MSH REAR LEGS SIDE VIEW		USA REAR LEG SET		-3.689	5.2506	
MSH REAR LEG REAR VIEW		USA REAR LEG REAR VIEW		4.997	-5.1959	
MSH UDDER DEPTH		USA UDDER DEPTH		3.455	3.1471	
MSH MEDIAN SUSPENSORY		USA MEDIAN SUSPENSORY		2.503	3.8990	
MSH FORE ATTACHMENT		USA FORE UDDER		7.683	3.4381	
MSH TEAT PLACEMENT		USA FRONT TEAT PLACEMENT		3.274	4.2480	
MSH TEAT LENGTH		USA TEAT LENGTH		-2.755	4.1630	
MSH REAR ATTACHMENT HEIGHT		USA REAR UDDER HEIGHT		7.449	3.5942	
MSH REAR TEAT PLACEMENT		USA REAR TEAT PLACEMENT		2.633	3.9557	
MSH ANGULARITY		USA ANGULARITY		7.599	4.5714	

CALCULATION OF FAT% AND PROTEIN% FOR APRIL 2021

BREED	BMILK	BFAT	BPRT
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AYS	7937	332	272
BSW	8455	361	303
CN	5698	249	206
GUE	7048	329	249
JER	6989	360	271
HOL	10718	424	350
MS	6898	276	229

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

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

EXAMPLE:

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

$$\begin{aligned} \text{EBVFAT\%} &= 200 * [(424 + 50 * 0.5) / (10718 + 1000 * 0.5) - (424 / 1113)] \\ &= 200 * [(424 + 25) / (10718 + 500) - (0.03956)] \\ &= 200 * [0.04002 - 0.03956] \\ &= 200 * 0.00047 \\ &= 0.09 \end{aligned}$$

$$\begin{aligned} \text{EBVPROT\%} &= 200 * [(350 + 40 * 0.5) / (10718 + 1000 * 0.5) - (350 / 1113)] \\ &= 200 * [(350 + 20) / (10718 + 500) - (0.03266)] \\ &= 200 * [0.03298 - 0.03266] \\ &= 200 * 0.00033 \\ &= 0.07 \end{aligned}$$