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 Conversion Factors For Production Traits. Source: INTERBULL 1808  
 Converted Canadian Proof = A + (B\* Foreign Proof)  
 Converted Proof Reliability = PCORR2\*Foreign Reliability

breed	country2	amilk	bmilk	afat	bfat	aprot	bprot	pcorr2
MSH	AUS	764.20	0.8840	58.500	1.3320	24.300	0.7730	0.6084
MSH	CAN	568.40	0.5950	39.300	0.7510	15.200	0.4430	0.7921
MSH	DEU	837.90	0.6320	70.000	0.8420	27.600	0.4800	0.7921
MSH	DFS	-2591.10	37.6360	-113.900	1.9040	-49.300	0.8620	0.7921
MSH	EST	816.60	0.8530	53.800	1.1330	25.300	0.6600	0.7921
MSH	GBR	291.00	1.4770	24.300	2.1790	9.900	1.3140	0.7921
MSH	IRL	1055.21	2.3437	60.538	2.6712	30.032	1.7096	0.6889
MSH	LTU	113.60	1.2360	28.600	1.3020	9.000	0.9880	0.7921
MSH	LVA	627.40	1.3420	50.000	1.6640	20.500	1.1120	0.7921
MSH	NLD	1473.55	0.5011	83.731	0.7071	41.348	0.3518	0.7921
MSH	NOR	-2059.60	30.9650	-100.600	1.6430	-42.600	0.7590	0.7921
MSH	NZL	547.70	1.2500	67.800	1.4860	24.700	1.0420	0.5776
MSH	USA	360.70	0.6630	24.300	0.9010	10.100	0.5150	0.8281
MSH	ZAF	424.06	0.7137	27.232	1.0395	11.172	0.5846	0.7921

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 Conversion Factors For SCS Traits. Source: INTERBULL 1808  
 Converted Canadian Proof = A + (B\* Foreign Proof)  
 Converted Proof Reliability = SCORR2\*Foreign Reliability

breed	country2	a	b	scorr2
MSH	AUS	3.500	-0.0050	0.8649
MSH	CAN	0.800	0.6870	0.8836
MSH	DEU	4.100	-0.0120	0.8836
MSH	DFS	4.100	-0.0130	0.8836
MSH	EST	4.300	-0.0130	0.8836
MSH	GBR	2.900	0.0140	0.8836
MSH	LTU	3.000	0.4700	0.8649
MSH	LVA	3.000	0.3790	0.8649
MSH	NLD	-1.546	0.0440	0.8836
MSH	NOR	4.100	-0.0120	0.8649
MSH	NZL	3.000	0.4000	0.8100
MSH	USA	0.800	0.7040	0.8100
MSH	ZAF	2.929	0.0067	0.8649

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 Conversion Factors For Type. Source = INTERBULL MACE 1808  
 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	-88.109	0.9190	0.52
MSH	FEET AND LEGS	AUS	OVERALL FEET & LEG	-62.302	0.6338	
MSH	MAMMARY SYSTEM	AUS	OVERALL UDDER SCORE	-69.227	0.7394	
MSH	STATURE	AUS	STATURE	-82.258	0.8215	
MSH	CHEST WIDTH	AUS	CHEST WIDTH	-80.546	0.8226	
MSH	BODY DEPTH	AUS	BODY DEPTH	-61.665	0.6262	
MSH	PIN WIDTH	AUS	RUMP WIDTH	-91.437	0.9215	
MSH	RUMP ANGLE	AUS	RUMP ANGLE	-72.365	0.7033	
MSH	FOOT ANGLE	AUS	FOOT ANGLE	-88.315	0.8854	
MSH	REAR LEGS SIDE VIEW	AUS	REAR LEG SET	-65.296	0.6613	
MSH	REAR LEG REAR VIEW	AUS	REAR LEG REAR VIEW	-68.497	0.7013	
MSH	UDDER DEPTH	AUS	UDDER DEPTH	-49.382	0.4965	
MSH	MEDIAN SUSPENSORY	AUS	MEDIAN SUSPENSORY	-60.673	0.6173	
MSH	FORE ATTACHMENT	AUS	FORE UDDER	-88.193	0.9058	
MSH	TEAT PLACEMENT	AUS	FRONT TEAT PLACEMENT	-90.748	0.9485	
MSH	TEAT LENGTH	AUS	TEAT LENGTH	-90.802	0.9074	
MSH	REAR ATTACHMENT HEIGHT	AUS	REAR UDDER HEIGHT	-76.571	0.7879	
MSH	REAR TEAT PLACEMENT	AUS	REAR TEAT PLACEMENT	-82.141	0.8330	
MSH	ANGULARITY	AUS	ANGULARITY	-63.188	0.6641	

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 Conversion Factors For Type. Source = INTERBULL MACE 1808  
 Converted Canadian Proof = A + (B\* Foreign Proof)  
 Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=CAN

b	c	c	f	a	b	t
r	a	o	o	v	v	c
e	n	u	r	a	a	o
e	t	r	a	l	l	r
d	i	y	i	u	u	r
	t	2	t	e	e	2
MSH	CONFORMATION	CAN	CONFORMATION	8.468	0.8363	0.74
MSH	FEET AND LEGS	CAN	OVERALL FEET & LEG	5.445	0.8642	
MSH	MAMMARY SYSTEM	CAN	OVERALL UDDER SCORE	10.603	0.9883	
MSH	STATURE	CAN	STATURE	4.246	0.8151	
MSH	CHEST WIDTH	CAN	CHEST WIDTH	-0.684	0.7487	
MSH	BODY DEPTH	CAN	BODY DEPTH	1.091	0.6811	
MSH	PIN WIDTH	CAN	RUMP WIDTH	2.780	0.9261	
MSH	RUMP ANGLE	CAN	RUMP ANGLE	-0.702	0.9372	
MSH	FOOT ANGLE	CAN	FOOT ANGLE	2.090	0.9708	
MSH	REAR LEGS SIDE VIEW	CAN	REAR LEG SET	-0.990	0.8214	
MSH	REAR LEG REAR VIEW	CAN	REAR LEG REAR VIEW	2.890	0.7098	
MSH	UDDER DEPTH	CAN	UDDER DEPTH	4.030	0.8275	
MSH	MEDIAN SUSPENSORY	CAN	MEDIAN SUSPENSORY	3.950	0.7954	
MSH	FORE ATTACHMENT	CAN	FORE UDDER	6.949	1.0054	
MSH	TEAT PLACEMENT	CAN	FRONT TEAT PLACEMENT	5.286	1.1426	
MSH	TEAT LENGTH	CAN	TEAT LENGTH	-1.537	1.3367	

MSH	REAR ATTACHMENT HEIGHT	CAN	REAR UDDER HEIGHT	9.795	0.9070
MSH	REAR TEAT PLACEMENT	CAN	REAR TEAT PLACEMENT	4.031	0.9339
MSH	ANGULARITY	CAN	ANGULARITY	8.024	0.7481

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Conversion Factors For Type. Source = INTERBULL MACE 1808  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=DEU

	c	c	f			
	a	o	o		b	t
b	n	u	r	a	v	c
r	t	n	t	v	v	
e	r	t	r	a	a	o
e	a	r	a	l	l	r
d	i	y	i	u	u	r
	t	2	t	e	e	2
MSH	FEET AND LEGS	DEU	OVERALL FEET & LEG	-26.614	0.3316	
MSH	MAMMARY SYSTEM	DEU	OVERALL UDDER SCORE	-29.157	0.3823	
MSH	STATURE	DEU	STATURE	-32.859	0.3772	
MSH	CHEST WIDTH	DEU	CHEST WIDTH	-42.047	0.4411	
MSH	BODY DEPTH	DEU	BODY DEPTH	-40.524	0.4414	
MSH	PIN WIDTH	DEU	RUMP WIDTH	-51.837	0.5635	
MSH	RUMP ANGLE	DEU	RUMP ANGLE	-63.196	0.5901	
MSH	FOOT ANGLE	DEU	FOOT ANGLE	-37.804	0.4359	
MSH	REAR LEGS SIDE VIEW	DEU	REAR LEG SET	-62.878	0.5835	
MSH	REAR LEG REAR VIEW	DEU	REAR LEG REAR VIEW	-43.462	0.4860	
MSH	UDDER DEPTH	DEU	UDDER DEPTH	-34.483	0.3796	
MSH	MEDIAN SUSPENSORY	DEU	MEDIAN SUSPENSORY	-35.368	0.3814	
MSH	FORE ATTACHMENT	DEU	FORE UDDER	-46.915	0.5105	
MSH	TEAT PLACEMENT	DEU	FRONT TEAT PLACEMENT	-42.105	0.4645	
MSH	TEAT LENGTH	DEU	TEAT LENGTH	-52.787	0.4943	
MSH	REAR ATTACHMENT HEIGHT	DEU	REAR UDDER HEIGHT	-30.804	0.3781	
MSH	REAR TEAT PLACEMENT	DEU	REAR TEAT PLACEMENT	-39.075	0.3990	
MSH	ANGULARITY	DEU	ANGULARITY	-33.002	0.4220	

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Conversion Factors For Type. Source = INTERBULL MACE 1808  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=DFS

	c	c	f			
	a	o	o		b	t
b	n	u	r	a	v	c
r	t	n	t	v	v	
e	r	t	r	a	a	o
e	a	r	a	l	l	r
d	i	y	i	u	u	r
	t	2	t	e	e	2
MSH	CONFORMATION	DFS	CONFORMATION	-52.298	0.5681	0.74

MSH	FEET AND LEGS	DFS	OVERALL FEET & LEG	-36.563	0.4044
MSH	MAMMARY SYSTEM	DFS	OVERALL UDDER SCORE	-46.095	0.5366
MSH	STATURE	DFS	STATURE	-56.014	0.5763
MSH	CHEST WIDTH	DFS	CHEST WIDTH	-42.200	0.4379
MSH	BODY DEPTH	DFS	BODY DEPTH	-37.718	0.3699
MSH	PIN WIDTH	DFS	RUMP WIDTH	-50.860	0.5263
MSH	RUMP ANGLE	DFS	RUMP ANGLE	-53.878	0.5353
MSH	FOOT ANGLE	DFS	FOOT ANGLE	-66.799	0.6993
MSH	REAR LEGS SIDE VIEW	DFS	REAR LEG SET	-56.906	0.5790
MSH	REAR LEG REAR VIEW	DFS	REAR LEG REAR VIEW	-41.843	0.4452
MSH	UDDER DEPTH	DFS	UDDER DEPTH	-37.616	0.4113
MSH	MEDIAN SUSPENSORY	DFS	MEDIAN SUSPENSORY	-35.660	0.3685
MSH	FORE ATTACHMENT	DFS	FORE UDDER	-44.273	0.4978
MSH	TEAT PLACEMENT	DFS	FRONT TEAT PLACEMENT	-45.233	0.5102
MSH	TEAT LENGTH	DFS	TEAT LENGTH	-67.401	0.6374
MSH	REAR ATTACHMENT HEIGHT	DFS	REAR UDDER HEIGHT	-44.382	0.4880
MSH	REAR TEAT PLACEMENT	DFS	REAR TEAT PLACEMENT	-42.117	0.4398
MSH	ANGULARITY	DFS	ANGULARITY	-53.077	0.5632

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Conversion Factors For Type. Source = INTERBULL MACE 1808  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=GBR

	c	c	f			
	a	o	o	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	FEET AND LEGS	GBR	OVERALL FEET & LEG	3.745	3.4479	
MSH	MAMMARY SYSTEM	GBR	OVERALL UDDER SCORE	9.804	4.1014	
MSH	STATURE	GBR	STATURE	1.854	4.3367	
MSH	CHEST WIDTH	GBR	CHEST WIDTH	3.430	3.6369	
MSH	BODY DEPTH	GBR	BODY DEPTH	3.245	3.1823	
MSH	PIN WIDTH	GBR	RUMP WIDTH	2.015	4.4179	
MSH	RUMP ANGLE	GBR	RUMP ANGLE	-2.746	3.6001	
MSH	FOOT ANGLE	GBR	FOOT ANGLE	-0.110	4.1968	
MSH	REAR LEGS SIDE VIEW	GBR	REAR LEG SET	-2.069	3.5220	
MSH	UDDER DEPTH	GBR	UDDER DEPTH	3.667	2.5191	
MSH	MEDIAN SUSPENSORY	GBR	MEDIAN SUSPENSORY	3.428	2.6899	
MSH	FORE ATTACHMENT	GBR	FORE UDDER	7.947	3.6033	
MSH	TEAT PLACEMENT	GBR	FRONT TEAT PLACEMENT	8.027	4.1519	
MSH	TEAT LENGTH	GBR	TEAT LENGTH	-2.660	4.8870	
MSH	REAR ATTACHMENT HEIGHT	GBR	REAR UDDER HEIGHT	7.542	4.0357	
MSH	ANGULARITY	GBR	ANGULARITY	4.473	4.3851	

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Conversion Factors For Type. Source = INTERBULL MACE 1808  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=NLD

	c	c	f			
	a	o	o		a	b
b	n	u	r		v	v
r	t	n	t		a	a
e	r	r	r		l	l
e	a	y	a		u	u
d	i	2	i		e	e
	t		t			2
MSH	CONFORMATION	NLD	CONFORMATION	-141.924	1.5955	0.74
MSH	FEET AND LEGS	NLD	OVERALL FEET & LEG	-64.316	0.7025	
MSH	MAMMARY SYSTEM	NLD	OVERALL UDDER SCORE	-120.206	1.3785	
MSH	STATURE	NLD	STATURE	-89.602	1.0290	
MSH	CHEST WIDTH	NLD	CHEST WIDTH	-113.973	1.2205	
MSH	BODY DEPTH	NLD	BODY DEPTH	-89.596	1.0061	
MSH	PIN WIDTH	NLD	RUMP WIDTH	-86.841	0.9645	
MSH	RUMP ANGLE	NLD	RUMP ANGLE	-98.141	0.9639	
MSH	FOOT ANGLE	NLD	FOOT ANGLE	-120.041	1.2824	
MSH	REAR LEGS SIDE VIEW	NLD	REAR LEG SET	-110.240	1.0511	
MSH	REAR LEG REAR VIEW	NLD	REAR LEG REAR VIEW	-83.650	0.8771	
MSH	UDDER DEPTH	NLD	UDDER DEPTH	-92.484	1.0001	
MSH	MEDIAN SUSPENSORY	NLD	MEDIAN SUSPENSORY	-91.161	0.9686	
MSH	FORE ATTACHMENT	NLD	FORE UDDER	-126.211	1.3670	
MSH	TEAT PLACEMENT	NLD	FRONT TEAT PLACEMENT	-134.310	1.4472	
MSH	TEAT LENGTH	NLD	TEAT LENGTH	-119.042	1.1954	
MSH	REAR ATTACHMENT HEIGHT	NLD	REAR UDDER HEIGHT	-89.054	1.0567	
MSH	REAR TEAT PLACEMENT	NLD	REAR TEAT PLACEMENT	-108.015	1.1434	
MSH	ANGULARITY	NLD	ANGULARITY	-91.458	1.1029	

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 Conversion Factors For Type. Source = INTERBULL MACE 1808  
 Converted Canadian Proof = A + (B\* Foreign Proof)  
 Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=NOR

	c	c	f			
	a	o	o		a	b
b	n	u	r		v	v
r	t	n	t		a	a
e	r	r	r		l	l
e	a	y	a		u	u
d	i	2	i		e	e
	t		t			2
MSH	CONFORMATION	NOR	CONFORMATION	-34.209	0.3564	0.74
MSH	FEET AND LEGS	NOR	OVERALL FEET & LEG	-33.550	0.3372	
MSH	MAMMARY SYSTEM	NOR	OVERALL UDDER SCORE	-41.177	0.4377	
MSH	STATURE	NOR	STATURE	-40.684	0.3817	
MSH	BODY DEPTH	NOR	BODY DEPTH	-28.525	0.2756	
MSH	RUMP ANGLE	NOR	RUMP ANGLE	-40.749	0.4161	
MSH	FOOT ANGLE	NOR	FOOT ANGLE	-38.854	0.3930	
MSH	REAR LEGS SIDE VIEW	NOR	REAR LEG SET	-37.455	0.3823	
MSH	REAR LEG REAR VIEW	NOR	REAR LEG REAR VIEW	-30.867	0.3219	
MSH	UDDER DEPTH	NOR	UDDER DEPTH	-34.657	0.3429	

MSH	MEDIAN SUSPENSORY	NOR	MEDIAN SUSPENSORY	-33.386	0.3143
MSH	FORE ATTACHMENT	NOR	FORE UDDER	-37.806	0.4010
MSH	TEAT PLACEMENT	NOR	FRONT TEAT PLACEMENT	-42.862	0.4616
MSH	TEAT LENGTH	NOR	TEAT LENGTH	-53.463	0.5030
MSH	REAR ATTACHMENT HEIGHT	NOR	REAR UDDER HEIGHT	-37.885	0.3745
MSH	REAR TEAT PLACEMENT	NOR	REAR TEAT PLACEMENT	-34.144	0.3603

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Conversion Factors For Type. Source = INTERBULL MACE 1808  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=NZL

	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	NZL	CONFORMATION	0.744	19.1533	0.61
MSH	MAMMARY SYSTEM	NZL	OVERALL UDDER SCORE	0.735	13.6889	
MSH	STATURE	NZL	STATURE	-6.757	10.2485	
MSH	CHEST WIDTH	NZL	CHEST WIDTH	2.083	15.3319	
MSH	BODY DEPTH	NZL	BODY DEPTH	0.737	12.3272	
MSH	PIN WIDTH	NZL	RUMP WIDTH	-2.160	18.1798	
MSH	RUMP ANGLE	NZL	RUMP ANGLE	-6.051	18.4799	
MSH	REAR LEGS SIDE VIEW	NZL	REAR LEG SET	1.382	43.0954	
MSH	MEDIAN SUSPENSORY	NZL	MEDIAN SUSPENSORY	-0.204	14.7901	
MSH	FORE ATTACHMENT	NZL	FORE UDDER	-0.910	17.8847	
MSH	TEAT PLACEMENT	NZL	FRONT TEAT PLACEMENT	0.042	23.0843	
MSH	REAR ATTACHMENT HEIGHT	NZL	REAR UDDER HEIGHT	3.251	16.6867	
MSH	REAR TEAT PLACEMENT	NZL	REAR TEAT PLACEMENT	-1.611	16.9483	

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Conversion Factors For Type. Source = INTERBULL MACE 1808  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=USA

	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	USA	CONFORMATION	6.794	6.5128	0.74
MSH	FEET AND LEGS	USA	OVERALL FEET & LEG	4.416	4.6181	
MSH	MAMMARY SYSTEM	USA	OVERALL UDDER SCORE	9.304	5.9641	

MSH	STATURE	USA	STATURE	2.308	2.3734
MSH	CHEST WIDTH	USA	CHEST WIDTH	-0.074	4.7831
MSH	BODY DEPTH	USA	BODY DEPTH	1.593	4.0403
MSH	PIN WIDTH	USA	RUMP WIDTH	1.786	4.7288
MSH	RUMP ANGLE	USA	RUMP ANGLE	-1.567	5.0931
MSH	FOOT ANGLE	USA	FOOT ANGLE	0.762	7.0603
MSH	REAR LEGS SIDE VIEW	USA	REAR LEG SET	-2.069	7.1901
MSH	REAR LEG REAR VIEW	USA	REAR LEG REAR VIEW	0.554	6.7709
MSH	UDDER DEPTH	USA	UDDER DEPTH	3.848	4.2238
MSH	MEDIAN SUSPENSORY	USA	MEDIAN SUSPENSORY	1.267	4.5566
MSH	FORE ATTACHMENT	USA	FORE UDDER	5.783	5.0705
MSH	TEAT PLACEMENT	USA	FRONT TEAT PLACEMENT	5.410	5.0845
MSH	TEAT LENGTH	USA	TEAT LENGTH	-2.392	5.8241
MSH	REAR ATTACHMENT HEIGHT	USA	REAR UDDER HEIGHT	9.008	4.4214
MSH	REAR TEAT PLACEMENT	USA	REAR TEAT PLACEMENT	3.756	4.8777
MSH	ANGULARITY	USA	ANGULARITY	7.179	5.1012

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CALCULATION OF FAT% AND PROTEIN% FOR AUGUST 2018

BREED	BMILK	BFAT	BPRT
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AYS	7802	325	263
BSW	8550	359	301
CN	5896	253	207
GUE	6583	305	225
JER	6643	336	255
HOL	10228	399	329
MS	6829	270	227

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

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

EXAMPLE:

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

$$EBVFAT\% = 200 * [ (399+50*.5) / (10228+1000*.5) - (399/ 1E4) ]$$

$$= 200 * [ (399+25) / (10228+500) - (0.03901) ]$$

$$= 200 * [ 0.03952 - 0.03901 ]$$

$$= 200 * 0.00051$$

$$= 0.10$$

$$EBVPROT\% = 200 * [ (329+40*.5) / (10228+1000*.5) - (329/ 1E4) ]$$

$$= 200 * [ (329+20) / (10228+500) - (0.03217) ]$$

$$= 200 * [ 0.03253 - 0.03217 ]$$

$$= 200 * 0.00037$$

$$= 0.07$$