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 Conversion Factors For Production Traits. Source: INTERBULL 1908
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = PCORR2*Foreign Reliability

breed	country2	amilk	bmilk	afat	bfat	aprot	bprot	pcorr2
MSH	AUS	815.60	0.9850	57.800	1.3450	28.300	0.9150	0.6084
MSH	CAN	613.70	0.6640	38.800	0.7680	17.800	0.5230	0.7921
MSH	DEU	926.80	0.7170	69.500	0.9490	32.400	0.6000	0.7921
MSH	DFS	-2824.10	41.1040	-118.600	1.9580	-56.400	1.0040	0.7921
MSH	EST	905.30	0.9160	53.600	1.1530	30.100	0.7500	0.7921
MSH	GBR	292.40	1.5400	21.600	2.1230	10.800	1.4660	0.7921
MSH	IRL	1108.19	2.4758	58.769	2.6846	34.478	1.9554	0.7056
MSH	LTU	68.40	1.3800	24.300	1.4260	9.000	1.2110	0.7921
MSH	LVA	668.20	1.4760	48.400	1.7430	23.700	1.2930	0.7921
MSH	NLD	1616.92	0.5728	85.415	0.7649	48.558	0.4186	0.7921
MSH	NOR	-2220.80	33.4570	-105.500	1.6900	-49.600	0.8870	0.7921
MSH	NZL	572.50	1.3240	67.000	1.5070	28.500	1.1810	0.5776
MSH	USA	384.80	0.7330	22.800	0.9330	11.700	0.5990	0.8464
MSH	ZAF	460.53	0.7136	24.866	1.0741	12.825	0.6753	0.7921

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 Conversion Factors For SCS Traits. Source: INTERBULL 1908
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = SCORR2*Foreign Reliability

breed	country2	a	b	scorr2
MSH	AUS	100.300	-17.5120	0.8649
MSH	CAN	8.400	0.9400	0.8836
MSH	DEU	63.500	0.3830	0.8836
MSH	DFS	63.400	0.4070	0.8836
MSH	EST	58.100	0.4360	0.8836
MSH	GBR	101.700	-0.4610	0.8836
MSH	LTU	99.500	-14.6480	0.8649
MSH	LVA	99.100	-11.9850	0.8649
MSH	NLD	-38.763	1.3942	0.8836
MSH	NOR	63.900	0.3790	0.8649
MSH	NZL	97.200	-12.8220	0.8281
MSH	USA	167.900	-22.1070	0.8100
MSH	ZAF	102.661	-0.2088	0.8649

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 Conversion Factors For Type. Source = INTERBULL MACE 1908
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = TCORR2*Foreign Reliability

country2=AUS

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MSH	CONFORMATION	AUS	CONFORMATION	4.090	6.9048	0.6
MSH	FET AND LEGS	AUS	OVERALL FEET & LEG	-56.620	0.5834	
MSH	MAMMARY SYSTEM	AUS	OVERALL UDDER SCORE	4.677	7.0131	
MSH	STATURE	AUS	STATURE	0.096	8.3380	
MSH	CHEST WIDTH	AUS	CHEST WIDTH	4.211	13.4666	
MSH	BODY DEPTH	AUS	BODY DEPTH	2.033	9.1560	
MSH	PIN WIDTH	AUS	RUMP WIDTH	2.148	14.3059	
MSH	RUMP ANGLE	AUS	RUMP ANGLE	-1.483	11.9862	
MSH	FOOT ANGLE	AUS	FOOT ANGLE	1.293	21.0091	
MSH	REAR LEGS SIDE VIEW	AUS	REAR LEG SET	1.379	20.5335	
MSH	REAR LEG REAR VIEW	AUS	REAR LEG REAR VIEW	2.407	18.3167	
MSH	UDDER DEPTH	AUS	UDDER DEPTH	0.157	8.9101	
MSH	MEDIAN SUSPENSORY	AUS	MEDIAN SUSPENSORY	0.321	11.6305	
MSH	FORE ATTACHMENT	AUS	FORE UDDER	3.760	12.2849	
MSH	TEAT PLACEMENT	AUS	FRONT TEAT PLACEMENT	2.065	11.3227	
MSH	TEAT LENGTH	AUS	TEAT LENGTH	0.326	14.8592	
MSH	REAR ATTACHMENT HEIGHT	AUS	REAR UDDER HEIGHT	0.331	9.8489	
MSH	REAR TEAT PLACEMENT	AUS	REAR TEAT PLACEMENT	-0.118	14.4406	
MSH	ANGULARITY	AUS	ANGULARITY	2.779	10.8101	

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 Conversion Factors For Type. Source = INTERBULL MACE 1908
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = TCORR2*Foreign Reliability

country2=CAN

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MSH	CONFORMATION	CAN	CONFORMATION	6.859	0.8017	0.7
4						
MSH	FEET AND LEGS	CAN	OVERALL FEET & LEG	6.269	0.8978	
MSH	MAMMARY SYSTEM	CAN	OVERALL UDDER SCORE	9.960	0.9603	
MSH	STATURE	CAN	STATURE	4.509	0.8112	
MSH	CHEST WIDTH	CAN	CHEST WIDTH	1.230	0.7958	
MSH	BODY DEPTH	CAN	BODY DEPTH	1.820	0.6595	
MSH	PIN WIDTH	CAN	RUMP WIDTH	5.034	0.9639	
MSH	RUMP ANGLE	CAN	RUMP ANGLE	-0.144	0.8613	
MSH	FOOT ANGLE	CAN	FOOT ANGLE	3.254	0.9751	
MSH	REAR LEGS SIDE VIEW	CAN	REAR LEG SET	-0.036	0.8380	
MSH	REAR LEG REAR VIEW	CAN	REAR LEG REAR VIEW	4.402	0.7769	
MSH	UDDER DEPTH	CAN	UDDER DEPTH	3.815	0.8273	
MSH	MEDIAN SUSPENSORY	CAN	MEDIAN SUSPENSORY	3.307	0.7646	
MSH	FORE ATTACHMENT	CAN	FORE UDDER	7.514	0.9523	
MSH	TEAT PLACEMENT	CAN	FRONT TEAT PLACEMENT	2.661	1.1185	
MSH	TEAT LENGTH	CAN	TEAT LENGTH	-1.395	1.3466	
MSH	REAR ATTACHMENT HEIGHT	CAN	REAR UDDER HEIGHT	7.314	0.8912	
MSH	REAR TEAT PLACEMENT	CAN	REAR TEAT PLACEMENT	2.415	0.9357	
MSH	ANGULARITY	CAN	ANGULARITY	7.187	0.7253	

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Conversion Factors For Type. Source = INTERBULL MACE 1908
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=DEU

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MSH	FEEET AND LEGS	DEU	OVERALL FEET & LEG	-27.149	0.3475
MSH	MAMMARY SYSTEM	DEU	OVERALL UDDER SCORE	-29.792	0.3807
MSH	STATURE	DEU	STATURE	-33.308	0.3831
MSH	CHEST WIDTH	DEU	CHEST WIDTH	-42.731	0.4639
MSH	BODY DEPTH	DEU	BODY DEPTH	-39.438	0.4314
MSH	PIN WIDTH	DEU	RUMP WIDTH	-52.605	0.5915
MSH	RUMP ANGLE	DEU	RUMP ANGLE	-59.679	0.5622
MSH	FOOT ANGLE	DEU	FOOT ANGLE	-35.839	0.4295
MSH	REAR LEGS SIDE VIEW	DEU	REAR LEG SET	-62.959	0.5923
MSH	REAR LEG REAR VIEW	DEU	REAR LEG REAR VIEW	-43.636	0.5002
MSH	UDDER DEPTH	DEU	UDDER DEPTH	-35.045	0.3854
MSH	MEDIAN SUSPENSORY	DEU	MEDIAN SUSPENSORY	-35.363	0.3755
MSH	FORE ATTACHMENT	DEU	FORE UDDER	-43.273	0.4832
MSH	TEAT PLACEMENT	DEU	FRONT TEAT PLACEMENT	-45.111	0.4748
MSH	TEAT LENGTH	DEU	TEAT LENGTH	-53.158	0.4928
MSH	REAR ATTACHMENT HEIGHT	DEU	REAR UDDER HEIGHT	-32.049	0.3640
MSH	REAR TEAT PLACEMENT	DEU	REAR TEAT PLACEMENT	-41.188	0.4094
MSH	ANGULARITY	DEU	ANGULARITY	-34.383	0.4265

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 Conversion Factors For Type. Source = INTERBULL MACE 1908
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 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	-48.171	0.5058	0.7
4						
MSH	FEEET AND LEGS	DFS	OVERALL FEET & LEG	-36.388	0.4112	
MSH	MAMMARY SYSTEM	DFS	OVERALL UDDER SCORE	-47.858	0.5497	

MSH	STATURE	DFS	STATURE	-56.527	0.5875
MSH	CHEST WIDTH	DFS	CHEST WIDTH	-42.437	0.4570
MSH	BODY DEPTH	DFS	BODY DEPTH	-35.796	0.3569
MSH	PIN WIDTH	DFS	RUMP WIDTH	-52.690	0.5627
MSH	RUMP ANGLE	DFS	RUMP ANGLE	-51.043	0.5106
MSH	FOOT ANGLE	DFS	FOOT ANGLE	-63.241	0.6699
MSH	REAR LEGS SIDE VIEW	DFS	REAR LEG SET	-56.200	0.5826
MSH	REAR LEG REAR VIEW	DFS	REAR LEG REAR VIEW	-43.694	0.4690
MSH	UDDER DEPTH	DFS	UDDER DEPTH	-38.848	0.4282
MSH	MEDIAN SUSPENSORY	DFS	MEDIAN SUSPENSORY	-35.971	0.3641
MSH	FORE ATTACHMENT	DFS	FORE UDDER	-40.800	0.4703
MSH	TEAT PLACEMENT	DFS	FRONT TEAT PLACEMENT	-48.301	0.5181
MSH	TEAT LENGTH	DFS	TEAT LENGTH	-66.854	0.6342
MSH	REAR ATTACHMENT HEIGHT	DFS	REAR UDDER HEIGHT	-45.019	0.4719
MSH	REAR TEAT PLACEMENT	DFS	REAR TEAT PLACEMENT	-44.826	0.4516
MSH	ANGULARITY	DFS	ANGULARITY	-55.296	0.5800

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Conversion Factors For Type. Source = INTERBULL MACE 1908
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
MSH	FEET AND LEGS	GBR	OVERALL FEET & LEG	4.178	3.5483	
MSH	MAMMARY SYSTEM	GBR	OVERALL UDDER SCORE	9.167	4.1564	
MSH	STATURE	GBR	STATURE	2.263	4.4360	
MSH	CHEST WIDTH	GBR	CHEST WIDTH	5.739	3.7938	

MSH	BODY DEPTH	GBR	BODY DEPTH	4.054	3.0807
MSH	PIN WIDTH	GBR	RUMP WIDTH	4.040	4.7109
MSH	RUMP ANGLE	GBR	RUMP ANGLE	-2.279	3.3702
MSH	FOOT ANGLE	GBR	FOOT ANGLE	1.132	4.0324
MSH	REAR LEGS SIDE VIEW	GBR	REAR LEG SET	-1.101	3.5542
MSH	UDDER DEPTH	GBR	UDDER DEPTH	3.430	2.5309
MSH	MEDIAN SUSPENSORY	GBR	MEDIAN SUSPENSORY	2.650	2.5824
MSH	FORE ATTACHMENT	GBR	FORE UDDER	8.108	3.3871
MSH	TEAT PLACEMENT	GBR	FRONT TEAT PLACEMENT	5.352	4.0728
MSH	TEAT LENGTH	GBR	TEAT LENGTH	-2.280	4.7777
MSH	REAR ATTACHMENT HEIGHT	GBR	REAR UDDER HEIGHT	5.016	3.9446
MSH	ANGULARITY	GBR	ANGULARITY	3.648	4.6315

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Conversion Factors For Type. Source = INTERBULL MACE 1908
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	-145.326	1.6222	0.7
6						
MSH	FEET AND LEGS	NLD	OVERALL FEET & LEG	-66.871	0.7361	
MSH	MAMMARY SYSTEM	NLD	OVERALL UDDER SCORE	-115.482	1.3185	
MSH	STATURE	NLD	STATURE	-91.599	1.0529	
MSH	CHEST WIDTH	NLD	CHEST WIDTH	-113.217	1.2332	
MSH	BODY DEPTH	NLD	BODY DEPTH	-86.687	0.9820	
MSH	PIN WIDTH	NLD	RUMP WIDTH	-89.256	1.0079	
MSH	RUMP ANGLE	NLD	RUMP ANGLE	-89.039	0.8804	
MSH	FOOT ANGLE	NLD	FOOT ANGLE	-122.532	1.3162	

MSH	REAR LEGS SIDE VIEW	NLD	REAR LEG SET	-109.879	1.0563
MSH	REAR LEG REAR VIEW	NLD	REAR LEG REAR VIEW	-90.113	0.9508
MSH	UDDER DEPTH	NLD	UDDER DEPTH	-89.995	0.9743
MSH	MEDIAN SUSPENSORY	NLD	MEDIAN SUSPENSORY	-92.730	0.9811
MSH	FORE ATTACHMENT	NLD	FORE UDDER	-112.920	1.2362
MSH	TEAT PLACEMENT	NLD	FRONT TEAT PLACEMENT	-139.809	1.4793
MSH	TEAT LENGTH	NLD	TEAT LENGTH	-122.453	1.2309
MSH	REAR ATTACHMENT HEIGHT	NLD	REAR UDDER HEIGHT	-89.073	1.0285
MSH	REAR TEAT PLACEMENT	NLD	REAR TEAT PLACEMENT	-105.229	1.1011
MSH	ANGULARITY	NLD	ANGULARITY	-96.131	1.1470

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Conversion Factors For Type. Source = INTERBULL MACE 1908
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=NOR

	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	NOR	CONFORMATION	-43.499	0.4560	0.7
4						
MSH	FEET AND LEGS	NOR	OVERALL FEET & LEG	-35.036	0.3558	
MSH	MAMMARY SYSTEM	NOR	OVERALL UDDER SCORE	-45.935	0.4834	
MSH	STATURE	NOR	STATURE	-42.747	0.4059	
MSH	CHEST WIDTH	NOR	CHEST WIDTH	-31.065	0.3877	
MSH	BODY DEPTH	NOR	BODY DEPTH	-27.322	0.2743	
MSH	PIN WIDTH	NOR	RUMP WIDTH	-38.632	0.4478	
MSH	RUMP ANGLE	NOR	RUMP ANGLE	-39.265	0.4045	
MSH	FOOT ANGLE	NOR	FOOT ANGLE	-39.766	0.4090	
MSH	REAR LEGS SIDE VIEW	NOR	REAR LEG SET	-40.481	0.4220	

MSH	REAR LEG REAR VIEW	NOR	REAR LEG REAR VIEW	-31.289	0.3310
MSH	UDDER DEPTH	NOR	UDDER DEPTH	-36.391	0.3588
MSH	MEDIAN SUSPENSORY	NOR	MEDIAN SUSPENSORY	-36.918	0.3461
MSH	FORE ATTACHMENT	NOR	FORE UDDER	-36.136	0.3925
MSH	TEAT PLACEMENT	NOR	FRONT TEAT PLACEMENT	-49.027	0.4980
MSH	TEAT LENGTH	NOR	TEAT LENGTH	-53.781	0.5107
MSH	REAR ATTACHMENT HEIGHT	NOR	REAR UDDER HEIGHT	-40.415	0.3774
MSH	REAR TEAT PLACEMENT	NOR	REAR TEAT PLACEMENT	-37.329	0.3768

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Conversion Factors For Type. Source = INTERBULL MACE 1908
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=NZL

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	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	1.115	18.3222	0.6
1						
MSH	MAMMARY SYSTEM	NZL	OVERALL UDDER SCORE	-0.629	13.8759	
MSH	STATURE	NZL	STATURE	-6.521	10.2629	
MSH	CHEST WIDTH	NZL	CHEST WIDTH	4.335	16.1528	
MSH	BODY DEPTH	NZL	BODY DEPTH	1.620	11.7266	
MSH	PIN WIDTH	NZL	RUMP WIDTH	-0.539	18.6614	
MSH	RUMP ANGLE	NZL	RUMP ANGLE	-5.217	17.6308	
MSH	REAR LEGS SIDE VIEW	NZL	REAR LEG SET	2.483	43.1697	
MSH	MEDIAN SUSPENSORY	NZL	MEDIAN SUSPENSORY	-1.213	14.9348	
MSH	FORE ATTACHMENT	NZL	FORE UDDER	-0.407	16.8608	
MSH	TEAT PLACEMENT	NZL	FRONT TEAT PLACEMENT	-2.519	23.2753	
MSH	REAR ATTACHMENT HEIGHT	NZL	REAR UDDER HEIGHT	0.576	15.6814	
MSH	REAR TEAT PLACEMENT	NZL	REAR TEAT PLACEMENT	-3.282	17.1302	

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 Conversion Factors For Type. Source = INTERBULL MACE 1908
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = TCORR2*Foreign Reliability

country2=USA

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	a	o	o		a	b
b	n	u	r		v	v
r	t	r	t		a	a
e	r	r	a		l	l
e	i	y	i		u	u
d	t	2	t		e	e
						t
						c
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						r
						2
MSH	CONFORMATION	USA	CONFORMATION	5.127	6.6542	0.7
6						
MSH	FEET AND LEGS	USA	OVERALL FEET & LEG	4.782	4.5531	
MSH	MAMMARY SYSTEM	USA	OVERALL UDDER SCORE	8.332	5.9150	
MSH	STATURE	USA	STATURE	2.678	2.4071	
MSH	CHEST WIDTH	USA	CHEST WIDTH	1.944	5.0273	
MSH	BODY DEPTH	USA	BODY DEPTH	2.325	3.9159	
MSH	PIN WIDTH	USA	RUMP WIDTH	3.773	4.9967	
MSH	RUMP ANGLE	USA	RUMP ANGLE	-1.074	4.9068	
MSH	FOOT ANGLE	USA	FOOT ANGLE	1.593	6.6826	
MSH	REAR LEGS SIDE VIEW	USA	REAR LEG SET	-1.077	7.1487	
MSH	REAR LEG REAR VIEW	USA	REAR LEG REAR VIEW	2.788	-6.8219	
MSH	UDDER DEPTH	USA	UDDER DEPTH	3.460	4.2051	
MSH	MEDIAN SUSPENSORY	USA	MEDIAN SUSPENSORY	0.505	4.6549	
MSH	FORE ATTACHMENT	USA	FORE UDDER	6.058	4.7307	
MSH	TEAT PLACEMENT	USA	FRONT TEAT PLACEMENT	2.842	5.1613	
MSH	TEAT LENGTH	USA	TEAT LENGTH	-1.939	5.7955	
MSH	REAR ATTACHMENT HEIGHT	USA	REAR UDDER HEIGHT	6.060	4.2409	
MSH	REAR TEAT PLACEMENT	USA	REAR TEAT PLACEMENT	2.091	4.9525	
MSH	ANGULARITY	USA	ANGULARITY	6.594	5.2478	

CALCULATION OF FAT% AND PROTEIN% FOR AUGUST 2019

BREED	BMILK	BFAT	BPRT
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AYS	7814	325	264
BSW	8650	366	305
CN	6147	264	217
GUE	6749	313	231
JER	6737	343	259
HOL	10399	407	336
MS	6588	262	220

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

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

EXAMPLE:

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

$$\begin{aligned}
 EBVFAT\% &= 200 * [(407 + 50 * 0.5) / (10399 + 1000 * 0.5) - (407 / 1E4)] \\
 &= 200 * [(407 + 25) / (10399 + 500) - (0.03914)] \\
 &= 200 * [0.03964 - 0.03914] \\
 &= 200 * 0.00050 \\
 &= 0.10
 \end{aligned}$$

$$\begin{aligned}
 EBVPROT\% &= 200 * [(336 + 40 * 0.5) / (10399 + 1000 * 0.5) - (336 / 1E4)] \\
 &= 200 * [(336 + 20) / (10399 + 500) - (0.03231)] \\
 &= 200 * [0.03266 - 0.03231] \\
 &= 200 * 0.00035 \\
 &= 0.07
 \end{aligned}$$