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 Conversion Factors For Production Traits. Source: INTERBULL 1812
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = PCORR2*Foreign Reliability

breed	country2	amilk	bmilk	afat	bfat	aprot	bprot	pcorr2
MSH	AUS	751.80	0.8740	56.700	1.2840	24.400	0.7720	0.6084
MSH	CAN	557.70	0.5840	37.900	0.7220	15.400	0.4410	0.7921
MSH	DEU	833.20	0.6240	68.100	0.8240	27.900	0.4790	0.7921
MSH	DFS	-2495.10	36.6540	-107.300	1.8180	-47.900	0.8520	0.7921
MSH	EST	817.80	0.8400	52.600	1.0980	25.700	0.6570	0.7921
MSH	GBR	290.30	1.4390	23.900	2.0590	10.200	1.2890	0.7921
MSH	IRL	1022.64	2.2678	57.939	2.5665	29.830	1.6752	0.6889
MSH	LTU	111.70	1.2190	28.000	1.2520	9.100	0.9870	0.7921
MSH	LVA	625.10	1.3220	48.800	1.6130	20.800	1.1020	0.7921
MSH	NLD	1438.80	0.4855	81.003	0.6877	41.124	0.3464	0.7921
MSH	NOR	-2012.00	30.4570	-96.800	1.5910	-42.700	0.7660	0.7921
MSH	NZL	534.50	1.2410	65.800	1.4580	24.800	1.0400	0.5776
MSH	USA	370.20	0.6590	24.300	0.8750	10.600	0.5160	0.8281
MSH	ZAF	418.78	0.7041	26.711	1.0031	11.464	0.5830	0.7921

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 Conversion Factors For SCS Traits. Source: INTERBULL 1812
 Converted Canadian Proof = A + (B* Foreign Proof)
 Converted Proof Reliability = SCORR2*Foreign Reliability

breed	country2	a	b	scorr2
MSH	AUS	83.100	0.1700	0.8649
MSH	CAN	4.300	0.9800	0.8836
MSH	DEU	62.600	0.3910	0.8836
MSH	DFS	62.400	0.4170	0.8836
MSH	EST	56.600	0.4520	0.8836
MSH	GBR	101.800	-0.4730	0.8836
MSH	LTU	99.600	-15.1590	0.8649
MSH	LVA	99.000	-12.2280	0.8649
MSH	NLD	-38.276	1.3885	0.8836
MSH	NOR	62.900	0.3880	0.8649
MSH	NZL	97.000	-13.0160	0.8100
MSH	USA	169.100	-22.4940	0.8100
MSH	ZAF	102.695	0.2145	0.8649

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 Conversion Factors For Type. Source = INTERBULL MACE 1812
 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	-89.398	0.9281	0.55
MSH	FEET AND LEGS	AUS	OVERALL FEET & LEG	-60.112	0.6105	
MSH	MAMMARY SYSTEM	AUS	OVERALL UDDER SCORE	-69.852	0.7438	
MSH	STATURE	AUS	STATURE	-82.610	0.8249	
MSH	CHEST WIDTH	AUS	CHEST WIDTH	-83.194	0.8472	
MSH	BODY DEPTH	AUS	BODY DEPTH	-60.877	0.6175	
MSH	PIN WIDTH	AUS	RUMP WIDTH	-91.275	0.9193	
MSH	RUMP ANGLE	AUS	RUMP ANGLE	-72.791	0.7071	
MSH	FOOT ANGLE	AUS	FOOT ANGLE	-85.169	0.8517	
MSH	REAR LEGS SIDE VIEW	AUS	REAR LEG SET	-66.915	0.6782	
MSH	REAR LEG REAR VIEW	AUS	REAR LEG REAR VIEW	-68.997	0.7062	
MSH	UDDER DEPTH	AUS	UDDER DEPTH	-48.592	0.4886	
MSH	MEDIAN SUSPENSORY	AUS	MEDIAN SUSPENSORY	-61.664	0.6271	
MSH	FORE ATTACHMENT	AUS	FORE UDDER	-83.831	0.8592	
MSH	TEAT PLACEMENT	AUS	FRONT TEAT PLACEMENT	-91.923	0.9607	
MSH	TEAT LENGTH	AUS	TEAT LENGTH	-90.783	0.9073	
MSH	REAR ATTACHMENT HEIGHT	AUS	REAR UDDER HEIGHT	-77.177	0.7935	
MSH	REAR TEAT PLACEMENT	AUS	REAR TEAT PLACEMENT	-83.252	0.8449	
MSH	ANGULARITY	AUS	ANGULARITY	-65.410	0.6860	

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Conversion Factors For Type. Source = INTERBULL MACE 1812
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	r	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	6.408	0.7683	0.74
MSH	FEET AND LEGS	CAN	OVERALL FEET & LEG	5.279	0.8639	
MSH	MAMMARY SYSTEM	CAN	OVERALL UDDER SCORE	10.207	0.9741	
MSH	STATURE	CAN	STATURE	4.245	0.8242	
MSH	CHEST WIDTH	CAN	CHEST WIDTH	-1.053	0.7746	
MSH	BODY DEPTH	CAN	BODY DEPTH	0.948	0.6806	
MSH	PIN WIDTH	CAN	RUMP WIDTH	2.749	0.9311	
MSH	RUMP ANGLE	CAN	RUMP ANGLE	-0.657	0.9448	
MSH	FOOT ANGLE	CAN	FOOT ANGLE	1.849	0.9338	
MSH	REAR LEGS SIDE VIEW	CAN	REAR LEG SET	-1.022	0.8467	
MSH	REAR LEG REAR VIEW	CAN	REAR LEG REAR VIEW	2.824	0.7315	
MSH	UDDER DEPTH	CAN	UDDER DEPTH	3.975	0.8131	
MSH	MEDIAN SUSPENSORY	CAN	MEDIAN SUSPENSORY	3.701	0.7900	
MSH	FORE ATTACHMENT	CAN	FORE UDDER	6.318	0.9619	
MSH	TEAT PLACEMENT	CAN	FRONT TEAT PLACEMENT	5.305	1.1529	
MSH	TEAT LENGTH	CAN	TEAT LENGTH	-1.468	1.3306	

MSH	REAR ATTACHMENT HEIGHT	CAN	REAR UDDER HEIGHT	9.557	0.9039
MSH	REAR TEAT PLACEMENT	CAN	REAR TEAT PLACEMENT	3.940	0.9341
MSH	ANGULARITY	CAN	ANGULARITY	7.875	0.7454

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Conversion Factors For Type. Source = INTERBULL MACE 1812
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	-27.526	0.3396	
MSH	MAMMARY SYSTEM	DEU	OVERALL UDDER SCORE	-28.456	0.3713	
MSH	STATURE	DEU	STATURE	-33.043	0.3794	
MSH	CHEST WIDTH	DEU	CHEST WIDTH	-43.758	0.4538	
MSH	BODY DEPTH	DEU	BODY DEPTH	-40.732	0.4418	
MSH	PIN WIDTH	DEU	RUMP WIDTH	-53.133	0.5753	
MSH	RUMP ANGLE	DEU	RUMP ANGLE	-63.759	0.5949	
MSH	FOOT ANGLE	DEU	FOOT ANGLE	-37.334	0.4279	
MSH	REAR LEGS SIDE VIEW	DEU	REAR LEG SET	-63.513	0.5906	
MSH	REAR LEG REAR VIEW	DEU	REAR LEG REAR VIEW	-44.427	0.4943	
MSH	UDDER DEPTH	DEU	UDDER DEPTH	-33.850	0.3718	
MSH	MEDIAN SUSPENSORY	DEU	MEDIAN SUSPENSORY	-35.543	0.3797	
MSH	FORE ATTACHMENT	DEU	FORE UDDER	-45.316	0.4919	
MSH	TEAT PLACEMENT	DEU	FRONT TEAT PLACEMENT	-42.655	0.4706	
MSH	TEAT LENGTH	DEU	TEAT LENGTH	-52.943	0.4945	
MSH	REAR ATTACHMENT HEIGHT	DEU	REAR UDDER HEIGHT	-30.437	0.3720	
MSH	REAR TEAT PLACEMENT	DEU	REAR TEAT PLACEMENT	-39.755	0.4050	
MSH	ANGULARITY	DEU	ANGULARITY	-33.754	0.4298	

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Conversion Factors For Type. Source = INTERBULL MACE 1812
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	-45.683	0.4827	0.74

MSH	FEET AND LEGS	DFS	OVERALL FEET & LEG	-36.411	0.4025
MSH	MAMMARY SYSTEM	DFS	OVERALL UDDER SCORE	-46.304	0.5363
MSH	STATURE	DFS	STATURE	-57.107	0.5874
MSH	CHEST WIDTH	DFS	CHEST WIDTH	-44.199	0.4535
MSH	BODY DEPTH	DFS	BODY DEPTH	-37.669	0.3682
MSH	PIN WIDTH	DFS	RUMP WIDTH	-52.581	0.5411
MSH	RUMP ANGLE	DFS	RUMP ANGLE	-54.407	0.5402
MSH	FOOT ANGLE	DFS	FOOT ANGLE	-64.523	0.6732
MSH	REAR LEGS SIDE VIEW	DFS	REAR LEG SET	-57.824	0.5895
MSH	REAR LEG REAR VIEW	DFS	REAR LEG REAR VIEW	-42.723	0.4534
MSH	UDDER DEPTH	DFS	UDDER DEPTH	-38.085	0.4168
MSH	MEDIAN SUSPENSORY	DFS	MEDIAN SUSPENSORY	-35.208	0.3633
MSH	FORE ATTACHMENT	DFS	FORE UDDER	-43.439	0.4848
MSH	TEAT PLACEMENT	DFS	FRONT TEAT PLACEMENT	-45.815	0.5167
MSH	TEAT LENGTH	DFS	TEAT LENGTH	-67.479	0.6364
MSH	REAR ATTACHMENT HEIGHT	DFS	REAR UDDER HEIGHT	-44.410	0.4874
MSH	REAR TEAT PLACEMENT	DFS	REAR TEAT PLACEMENT	-42.914	0.4491
MSH	ANGULARITY	DFS	ANGULARITY	-53.989	0.5734

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Conversion Factors For Type. Source = INTERBULL MACE 1812
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	3.492	3.4534	
MSH	MAMMARY SYSTEM	GBR	OVERALL UDDER SCORE	9.518	3.9861	
MSH	STATURE	GBR	STATURE	1.816	4.4085	
MSH	CHEST WIDTH	GBR	CHEST WIDTH	3.335	3.7691	
MSH	BODY DEPTH	GBR	BODY DEPTH	3.068	3.1548	
MSH	PIN WIDTH	GBR	RUMP WIDTH	1.999	4.4557	
MSH	RUMP ANGLE	GBR	RUMP ANGLE	-2.755	3.6179	
MSH	FOOT ANGLE	GBR	FOOT ANGLE	-0.260	4.0043	
MSH	REAR LEGS SIDE VIEW	GBR	REAR LEG SET	-2.006	3.5606	
MSH	UDDER DEPTH	GBR	UDDER DEPTH	3.609	2.4345	
MSH	MEDIAN SUSPENSORY	GBR	MEDIAN SUSPENSORY	3.333	2.5954	
MSH	FORE ATTACHMENT	GBR	FORE UDDER	7.300	3.4458	
MSH	TEAT PLACEMENT	GBR	FRONT TEAT PLACEMENT	8.150	4.1532	
MSH	TEAT LENGTH	GBR	TEAT LENGTH	-2.609	4.8358	
MSH	REAR ATTACHMENT HEIGHT	GBR	REAR UDDER HEIGHT	7.345	4.0509	
MSH	ANGULARITY	GBR	ANGULARITY	4.295	4.4585	

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Conversion Factors For Type. Source = INTERBULL MACE 1812
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	-140.800	1.5732	0.74
MSH	FEET AND LEGS	NLD	OVERALL FEET & LEG	-65.325	0.7132	
MSH	MAMMARY SYSTEM	NLD	OVERALL UDDER SCORE	-120.384	1.3783	
MSH	STATURE	NLD	STATURE	-91.685	1.0516	
MSH	CHEST WIDTH	NLD	CHEST WIDTH	-119.481	1.2742	
MSH	BODY DEPTH	NLD	BODY DEPTH	-90.604	1.0155	
MSH	PIN WIDTH	NLD	RUMP WIDTH	-86.599	0.9577	
MSH	RUMP ANGLE	NLD	RUMP ANGLE	-95.162	0.9352	
MSH	FOOT ANGLE	NLD	FOOT ANGLE	-119.777	1.2774	
MSH	REAR LEGS SIDE VIEW	NLD	REAR LEG SET	-112.170	1.0700	
MSH	REAR LEG REAR VIEW	NLD	REAR LEG REAR VIEW	-84.454	0.8867	
MSH	UDDER DEPTH	NLD	UDDER DEPTH	-91.421	0.9892	
MSH	MEDIAN SUSPENSORY	NLD	MEDIAN SUSPENSORY	-94.099	1.0004	
MSH	FORE ATTACHMENT	NLD	FORE UDDER	-124.436	1.3426	
MSH	TEAT PLACEMENT	NLD	FRONT TEAT PLACEMENT	-134.806	1.4525	
MSH	TEAT LENGTH	NLD	TEAT LENGTH	-120.567	1.2099	
MSH	REAR ATTACHMENT HEIGHT	NLD	REAR UDDER HEIGHT	-86.686	1.0275	
MSH	REAR TEAT PLACEMENT	NLD	REAR TEAT PLACEMENT	-108.059	1.1470	
MSH	ANGULARITY	NLD	ANGULARITY	-94.486	1.1361	

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 Conversion Factors For Type. Source = INTERBULL MACE 1812
 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	-42.378	0.4440	0.74
MSH	FEET AND LEGS	NOR	OVERALL FEET & LEG	-35.500	0.3552	
MSH	MAMMARY SYSTEM	NOR	OVERALL UDDER SCORE	-44.007	0.4681	
MSH	STATURE	NOR	STATURE	-42.414	0.4011	
MSH	CHEST WIDTH	NOR	CHEST WIDTH	-33.544	0.3850	
MSH	BODY DEPTH	NOR	BODY DEPTH	-28.901	0.2803	
MSH	PIN WIDTH	NOR	RUMP WIDTH	-39.281	0.4325	
MSH	RUMP ANGLE	NOR	RUMP ANGLE	-41.936	0.4279	
MSH	FOOT ANGLE	NOR	FOOT ANGLE	-40.923	0.4106	
MSH	REAR LEGS SIDE VIEW	NOR	REAR LEG SET	-41.923	0.4273	

MSH	REAR LEG REAR VIEW	NOR	REAR LEG REAR VIEW	-31.188	0.3249
MSH	UDDER DEPTH	NOR	UDDER DEPTH	-34.913	0.3459
MSH	MEDIAN SUSPENSORY	NOR	MEDIAN SUSPENSORY	-36.372	0.3444
MSH	FORE ATTACHMENT	NOR	FORE UDDER	-38.266	0.4007
MSH	TEAT PLACEMENT	NOR	FRONT TEAT PLACEMENT	-46.465	0.4955
MSH	TEAT LENGTH	NOR	TEAT LENGTH	-54.343	0.5137
MSH	REAR ATTACHMENT HEIGHT	NOR	REAR UDDER HEIGHT	-45.413	0.4587
MSH	REAR TEAT PLACEMENT	NOR	REAR TEAT PLACEMENT	-35.803	0.3791

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Conversion Factors For Type. Source = INTERBULL MACE 1812
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	1.489	17.2056	0.61
MSH	MAMMARY SYSTEM	NZL	OVERALL UDDER SCORE	0.432	13.4257	
MSH	STATURE	NZL	STATURE	-6.786	10.2397	
MSH	CHEST WIDTH	NZL	CHEST WIDTH	1.960	15.6935	
MSH	BODY DEPTH	NZL	BODY DEPTH	0.654	12.2857	
MSH	PIN WIDTH	NZL	RUMP WIDTH	-2.245	18.2149	
MSH	RUMP ANGLE	NZL	RUMP ANGLE	-6.108	18.5920	
MSH	REAR LEGS SIDE VIEW	NZL	REAR LEG SET	1.516	43.5691	
MSH	MEDIAN SUSPENSORY	NZL	MEDIAN SUSPENSORY	-0.301	14.7301	
MSH	FORE ATTACHMENT	NZL	FORE UDDER	-1.301	17.2140	
MSH	TEAT PLACEMENT	NZL	FRONT TEAT PLACEMENT	0.092	23.3047	
MSH	REAR ATTACHMENT HEIGHT	NZL	REAR UDDER HEIGHT	3.123	16.7015	
MSH	REAR TEAT PLACEMENT	NZL	REAR TEAT PLACEMENT	-1.567	17.0863	

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Conversion Factors For Type. Source = INTERBULL MACE 1812
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	5.157	6.2724	0.74
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MSH	FEET AND LEGS	USA	OVERALL FEET & LEG	4.223	4.5044
MSH	MAMMARY SYSTEM	USA	OVERALL UDDER SCORE	8.870	5.7236
MSH	STATURE	USA	STATURE	2.321	2.3979
MSH	CHEST WIDTH	USA	CHEST WIDTH	-0.354	4.9111
MSH	BODY DEPTH	USA	BODY DEPTH	1.507	4.0326
MSH	PIN WIDTH	USA	RUMP WIDTH	1.933	4.8116
MSH	RUMP ANGLE	USA	RUMP ANGLE	-1.630	5.1734
MSH	FOOT ANGLE	USA	FOOT ANGLE	0.557	6.6646
MSH	REAR LEGS SIDE VIEW	USA	REAR LEG SET	-1.948	7.2295
MSH	REAR LEG REAR VIEW	USA	REAR LEG REAR VIEW	0.524	6.7156
MSH	UDDER DEPTH	USA	UDDER DEPTH	3.681	4.1074
MSH	MEDIAN SUSPENSORY	USA	MEDIAN SUSPENSORY	0.987	4.6055
MSH	FORE ATTACHMENT	USA	FORE UDDER	5.159	4.8352
MSH	TEAT PLACEMENT	USA	FRONT TEAT PLACEMENT	5.365	5.1671
MSH	TEAT LENGTH	USA	TEAT LENGTH	-2.272	5.8216
MSH	REAR ATTACHMENT HEIGHT	USA	REAR UDDER HEIGHT	8.526	4.3366
MSH	REAR TEAT PLACEMENT	USA	REAR TEAT PLACEMENT	3.646	4.9651
MSH	ANGULARITY	USA	ANGULARITY	7.132	5.2532

CALCULATION OF FAT% AND PROTEIN% FOR DECEMBER 2018

BREED	BMILK	BFAT	BPRT
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AYS	7799	325	263
BSW	8516	358	301
CN	5852	252	205
GUE	6576	304	225
JER	6632	336	254
HOL	10222	399	329
MS	6711	268	224

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

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

EXAMPLE:

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

$$\begin{aligned}
 EBVFAT\% &= 200 * [(399+50*0.5) / (10222+1000*0.5) - (399 / 1E4)] \\
 &= 200 * [(399+25) / (10222+500) - (0.03903)] \\
 &= 200 * [0.03954 - 0.03903] \\
 &= 200 * 0.00051 \\
 &= 0.10
 \end{aligned}$$

$$\begin{aligned}
 EBVPROT\% &= 200 * [(329+40*0.5) / (10222+1000*0.5) - (329 / 1E4)] \\
 &= 200 * [(329+20) / (10222+500) - (0.03219)] \\
 &= 200 * [0.03255 - 0.03219] \\
 &= 200 * 0.00036 \\
 &= 0.07
 \end{aligned}$$