

**2021 TJSSA State Futurity
Genetic Evaluation Quiz
Intermediate Division**

You have 60 minutes to complete this quiz. Questions 31 through 35 are tiebreaker questions. Further ties will be broken by order of finish.
For each question, choose the best answer.

For questions 1 through 10, refer to the following sires. Information on these bulls can be found on the last sheet of your quiz.

- A. Double Bar D Annuity 635F
- B. GSC GCCO Dew North 102C
- C. SAS Copperhead G354
- D. THSF Lover Boy B33
- E. WHF/JS/CCS Double Up G365

1. Which bull should you expect to produce offspring with the heaviest 205-day weights, on average?
2. Which bull is most likely to be tested for the diluter gene?
3. Which bull should you expect to produce daughters with the highest percentage of unassisted births as first-calf heifers?
4. Which bull's dam has likely not been DNA tested by the American Simmental Association or its partner labs?
5. How many of these bulls are better than breed average for direct Calving Ease?
 - a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. 5
6. Consider the CE EPD of Bull E. In spite of its relatively low accuracy, we can be fairly confident (68%) that the true value of this EPD lies in what range?
 - a. 6.8 to 25.2
 - b. 8.0 to 24.0
 - c. 13.7 to 18.3
 - d. 12.0 to 20.0
 - e. 11.4 to 20.6
7. True or False: All of these bulls could sire calves that are 3/4 SM 1/4 AN.
 - a. True
 - b. False
 - c. Not enough information is available.
8. In a carcass study, Bull D sired a small group of terminal offspring with an average Yield Grade of 2.0. Based on their current EPDs, what would you expect those average Yield Grades to be if Bull B had been used instead?
 - a. 1.0
 - b. 1.9
 - c. 1.99
 - d. 2.1
 - e. 3.0
9. Within Contemporary Group 4, five bull calves sired by Bull C have an average WW ratio of 106. Bull A sired three bulls in the same contemporary group. What would you expect of their WW ratios?
 - a. The bull calves sired by Bull A should have a lower average WW ratio.
 - b. The bull calves sired by Bull A should have a higher average WW ratio.
 - c. The bull calves sired by Bull A should have a similar average WW ratio.
 - d. None of the above. A contemporary group cannot contain multiple sire groups.
 - e. None of the above. A contemporary group must contain equal numbers of calves for each sire.
10. How many of these bulls are definitely homozygous polled by pedigree?
 - a. 5
 - b. 4
 - c. 3
 - d. 2
 - e. 1

11. Due to a record keeping error, you are unsure of a calf's AI sire. However, you can confidently narrow it to four possibilities. You submit DNA on the calf and its dam. Combined with the sire information already on file, you may be able to identify the calf's sire. Based on these simplified lab results, which bull is the sire?

	<i>Locus 1</i>	<i>Locus 2</i>	<i>Locus 3</i>	<i>Locus 4</i>	<i>Locus 5</i>
Calf:	Aa	bb	CC	Dd	EE
Dam:	AA	Bb	Cc	dd	EE
a. Sire A:	aa	BB	CC	dd	Ee
b. Sire B:	aa	Bb	CC	Dd	ee
c. Sire C:	Aa	bb	cc	DD	Ee
d. Sire D:	Aa	bb	Cc	DD	EE
e. Multiple sires not excluded. More information is needed.					

12. Which of the following is the least likely to experience significant change in its EPDs and indexes?
- An animal with EPDs that are closest to breed average
 - An animal that has been genomic tested
 - An animal with high EPD accuracies
 - An animal whose calves have the best ratios in their contemporary groups
13. SimAngus™ Cow 622 has a CW EPD of 41.9. SimAngus™ Cow 715 has a CW EPD of 34.8. Based on this information, which of the following statements is definitely true?
- You should expect Cow 622 to produce offspring with heavier actual carcass weights, on average.
 - You should expect Cow 622 to produce offspring with heavier adjusted weaning weights, on average.
 - You should expect Cow 622 to produce offspring with better USDA Yield Grades, on average.
 - All of the above.
 - None of the above. Terminal EPDs only apply to sires.
14. Which of ASA's EPDs measures pounds of weaning weight due to growth and milk?
- Maternal Milk (MILK)
 - Maternal Weaning Weight (MWW)
 - Weaning Weight (WW)
 - Pre-Weaning Gain (PWG)
15. High EPD accuracies can be achieved through:
- genomic testing
 - progeny reports
 - ultrasound data
 - All of the above
16. Which of the following would not result in a Purebred Simmental calf?
- A 3/4 SM 1/4 AR cow bred to a Purebred Simmental bull
 - A 3/4 SM 1/8 AN 1/8 BR cow bred to a Purebred Simmental bull
 - A 5/8 SM 3/8 cow bred to a Purebred Simmental bull
 - A Fullblood Simmental cow bred to a Purebred Simmental bull
17. Within a contemporary group, what is the average birth weight ratio?
- 1
 - 50
 - 100
 - Not enough information is available.
18. Which of the following is definitely not an example of an Economically Relevant Trait (ERT)?
- Heifer Pregnancy
 - Weaning Weight
 - Calving Ease
 - Birth Weight
19. Purebred Simmental Bull X has a CE EPD of 20.4 with an accuracy of 0.82. Purebred Simmental Bull Y has a CE EPD of 20.4 with an accuracy of 0.46. Which bull should you more confidently use on your heifers?
- Bull X
 - Bull Y
 - You should have equal confidence in both bulls.
 - You should have no confidence in either bull.

20. A commercial breeder is turning out her heterozygous black herd sire with a group of 32 open females. 8 of these females are homozygous black, 20 are heterozygous black, and 4 are red. Assuming 100% conception and all single births (no twins), how many red calves should the producer expect to have?
- 0
 - 5
 - 7
 - 9
 - 11

For questions 21 through 25, use the graphic below.

ASA #: 3402630
Registered

WBF SUCCESS F153
Black (Heterozygous Black)
Polled (Homozygous Polled)

Tattoo: F153
Both Ears

Single Birth Bull

PB SM

PQB GE

TraitTrac
(Check available results)

Owner: 034804 - WILDBERRY FARMS **Birth Date:** 2018-03-25

Breeder: 034804 - WILDBERRY FARMS **Original Issue:** 2018-05-07

BOLT - 2021-04-27

	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
EPD	13.7	0.7	81.1	121.5	0.25	4.4	29.7	70.2	15.3	11.3	31.8	-0.44	0.47	-0.097	0.90	-0.40	154.0	90.7
PC	±4.13	±1.2	±7.5	±12.08	±0.013	±6	±9.88	±8.83	±5.25	±3.25	±9.84	±0.13	±0.159	±0.025	±0.237	±0.24		
ACC	0.47	0.60	0.54	0.53	0.53	0.24	0.17	0.27	0.26	0.35	0.49	0.37	0.39	0.38	0.45	0.04		
%	15	30	35	35	40	75	10	15	65	50	40	45	4	40	45	20	10	10

- Pedigree +

		Color	HPS
PVFS RUBY MADDEN 126Y	2578617		
RUBY SWC MADDEN D665	3134710	B	PP
SWC RUBY YETTI 143Y	2587614	BB	PP
WBF SUCCESS F153	3402630	BH	PP
GW-WBF SUBSTANCE 820Y	2605922	BB	PP
WBF JACKIE C643	2972911	B	P
WBF JACKIE S427	2365518		P

21. Which of the following EPDs for this bull is the least susceptible to significant change?
- Birth Weight
 - Marbling
 - Maternal Calving Ease
 - Milk
22. True or False: It is possible that this bull was the product of embryo transfer.
- True
 - False
 - Not enough information is available.
23. This bull ranks in the 10th Percentile for API. What does this mean?
- His API is likely to change by as much as 10%.
 - His API is likely to change by as much as 90%.
 - His API is better than 10% of the breed.
 - His API is better than 90% of the breed.
24. Compared to breed average, you would expect this bull to produce offspring that:
- have a higher percentage of USDA Prime carcasses.
 - have higher average ADJ WWs.
 - are lighter at birth, on average.
 - All of the above
 - Only A and C
25. If you breed your favorite red cow to this bull, what is the likelihood that she will have a red calf?
- 100%
 - 75%
 - 50%
 - 25%
 - 0%

26. You are in the market for a new Purebred Simmental herd sire. You estimate that he will breed 35 females per year over the next three years before you replace him. You intend to keep his best daughters as replacement females, and the rest of his calves will be sold on grade and yield. At a sale, you narrow your scope to two bulls: Lot 7 has an \$API of 146.3 and a \$TI of 80.7, and Lot 12 has an \$API of 131.3 and a \$TI of 76.7. By trusting and using these indexes, which of the following is true?
- Lot 7 provides \$1995 more value to your program.
 - Lot 7 provides \$1575 more value to your program.
 - Lot 7 provides \$525 more value to your program.
 - Lot 7 provides \$420 more value to your program.
 - None of the above. Lot 12 is more valuable.
27. What ASA program focuses on gathering genotype information on all the females within individual herds, in order to improve genomic evaluations and increase genetic progress?
- Cow Herd Roundup (CHR)
 - Total Herd Enrollment (THE)
 - Progress Through Performance (PTP)
 - HerdBuilder (HB)
28. Which EPD or index is generally considered to be the best indicator of muscle mass?
- TI
 - MARB
 - CW
 - REA
 - YG
29. SimAngus™ Bull X has a BF EPD of -0.035 and a REA EPD of 0.56. SimAngus™ Bull Y has a BF EPD of -0.079 and a REA EPD of 0.86. Which of the following statements should you expect to be true?
- Bull X should produce offspring with better USDA Yield Grades.
 - Bull Y should produce offspring with better USDA Yield Grades.
 - Bull X should produce offspring with better USDA Quality Grades.
 - Bull Y should produce offspring with better USDA Quality Grades.
 - Both B and C are true.
30. Which of the following statements about \$TI is true?
- Because \$TI is a terminal index, there is no emphasis placed on Maternal Calving Ease.
 - Because \$TI is a terminal index, there is no emphasis placed on Weaning Weight.
 - Because \$TI is a terminal index, there is no emphasis placed on Calving Ease.
 - All of the above are true.

TIEBREAKER QUESTIONS

Questions 31 through 35 are tiebreaker questions only.

31. In what year was the first Simmental Sire Summary published?
- 1961
 - 1971
 - 1981
 - 1991
32. You have an eight-year-old SimAngus™ cow that is considered a Population Risk for CA. If you want to clear the members of this cow family as potential genetic defect carriers, what is the first thing you should do?
- Run a full genomic test (GGP-LD or higher) on the eight-year-old cow.
 - Test the eight-year-old cow and all her daughters remaining in your herd for CA.
 - Only use AI bulls and natural service sires that are documented as CA-free.
 - Test the eight-year-old cow for CA.
 - No extra measures are needed. If she were a CA carrier, it would have presented in one of her descendants by now.

33. A young sire's first daughters were born in Spring 2021. In the year these daughters are first able to directly contribute to their sire's Stayability records, what will be the tattoo letter of their calves?
- N
 - O
 - P
 - Q
 - R
34. Through DNA testing, you learn that the cow you are planning to flush is heterozygous for both the horned/polled and color coat traits. The flush sire you are considering is homozygous polled and heterozygous black. If you proceed with this mating, what is the likelihood that each calf will be black and homozygous polled?
- 75%
 - 62.5%
 - 50%
 - 37.5%
 - 25%
35. Osteopetrosis (OS), commonly known as *marble bone*, is a lethal genetic defect that most often affects what breed?
- Angus
 - Hereford
 - Red Angus
 - Shorthorn

ASA #: 3542861

Registered

CANSM - 1249222

DOUBLE BAR D ANNUITY 635F

Black (Heterozygous Black)

Polled (Homozygous Polled)

Tattoo: RLD 635F

Right Ear

Single Birth Bull

PB SM

PQS GE

TraitTrac

(Check available results)

Owner: 344688 - HIGH RIDGE FARMS/BOUCHARD LIVESTOCK

Birth Date: 2018-03-22

Breeder: 309941 - DOUBLE BAR D RANCH

Original Issue: 2019-03-13

BOLT - 2021-04-27

EPD	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
12.4	2.6	68.6	96.8	0.18	7.7	25.2	59.4	16.3	7.0	34.3	-0.43	0.03	-0.101	0.89	-0.21	120.2	68.7	
±4.21	±1.5	±8.8	±13.88	±0.015	±5.85	±9.76	±8.71	±5.25	±3.3	±10.42	±0.13	±0.153	±0.025	±0.237	±0.247			
ACC	0.46	0.50	0.46	0.46	0.26	0.18	0.28	0.26	0.34	0.46	0.36	0.41	0.37	0.45	0.01			
%	30	70	80	90	20	35	65	50	95	30	50	75	20	50	99	70	90	

Pedigree

Color HPS

W/C LOADED UP 1119Y	CANSM - 1199413	2654155	BH	PP
W/C BANKROLL 811D	CANSM - 1217569	3187005	BH	PP
MISS WERNING KP 8543U		2446017	B	
DOUBLE BAR D ANNUITY 635F	CANSM - 1249222	3542861	BH	PP
JF AMERICAN PRIDE 0987X	CANSM - 1124288	2573743	B	P
DOUBLE BAR D PAYTON 425B	CANSM - 1127052	(3542860)	B	P
DOUBLE BAR D PAYTON 658Z	CANSM - 1114471	(3542859)	BH	P

ASA #: 3141837

Registered

GSC GCCO DEW NORTH 102C

Black (Homozygous Black)

Polled (Homozygous Polled)

Tattoo: 102C

Left Ear

Frozen Embryo Bull

PB SM

PQB GE

TraitTrac

(Check available results)

Owner: 255562 - GLACIER CATTLE CO

Birth Date: 2015-09-10

Breeder: 324327 - COLE WHISMAN/GERDES SHOW CATTLE

Original Issue: 2016-08-30

BOLT - 2021-04-27

EPD	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
15.0	0.1	89.5	120.6	0.19	7.7	19.0	63.7	9.6	10.5	30.9	-0.50	-0.05	-0.095	1.09	-0.44	117.6	82.0	
±2.65	±0.57	±5.05	±8.74	±0.01	±4.74	±8.57	±7.38	±4.62	±3.55	±7.72	±0.11	±0.133	±0.02	±0.189	±0.198			
ACC	0.66	0.81	0.69	0.66	0.40	0.28	0.39	0.35	0.29	0.60	0.46	0.49	0.49	0.56	0.21			
%	10	20	10	35	85	20	85	40	99	60	45	15	95	40	15	10	75	25

Pedigree

Color HPS

CNS DREAM ON L186	CANSM - 632589	2144976		PP
HTP/SVF DURACELL T52		2392068	BB	
HTP SVF HONEYDEW		2140238		P
GSC GCCO DEW NORTH 102C		3141837	BB	PP
WELSHS DEW IT RIGHT067T		2403649	BB	PP
WELSH'S SCARLET 161Z		2685388	B	P
WELSHS ROXIE 103W		2510264	BH	P

ASA #: 3620331

Registered

SAS COPPERHEAD G354

Red

Polled (Homozygous Polled)

Tattoo: G354

Left Ear

Single Birth Bull

PB SM

PQB GE

TraitTrac

(Check available results)

Owner: 166320 - ROBERT & DEANNE YOUNG

Birth Date: 2019-02-10

Breeder: 040241 - SPRINGERS ARABIANS & SIMM

Original Issue: 2019-10-08

BOLT - 2021-04-27

EPD	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
9.0	1.9	88.5	130.1	0.26	3.6	31.7	75.9	17.7	9.9	12.5	-0.47	0.07	-0.075	0.93	-0.34	131.1	83.2	
±4.06	±1.29	±8.8	±13.62	±0.015	±5.85	±9.4	±8.59	±5.18	±3.25	±10.23	±0.13	±0.153	±0.026	±0.237	±0.24			
ACC	0.48	0.57	0.46	0.47	0.47	0.26	0.21	0.29	0.27	0.35	0.47	0.37	0.41	0.36	0.45	0.04		
%	75	55	15	20	35	90	5	4	30	70	99	30	65	80	40	50	40	25

Pedigree

Color HPS

NCB COBRA 47Y	CANSM - 755730	2966133	B	P
ERIXON BITTEN 203A	CANSM - 1115825	2966135	B	P
BMD MISS BLK ICE DANCER	CANSM - 766465	(2966134)	B	P
SAS COPPERHEAD G354		3620331	R	PP
R PLUS RELOAD 2006Z	CANSM - 775135	2794997		PP
SAS MISS ARAPHAOE B354		2958847	B	PP
SAS STARLIGHT Z354		2642610	B	PP

ASA #: 2983443
Registered

THSF LOVER BOY B33

Black (Heterozygous Black)
Polled (Homozygous Polled)

Tattoo: B33
Left Ear

Frozen Embryo Bull

PB SM

PQB GE

TraitTrac
(Check available results)

Owner: 001090 - YARDLEY CATTLE CO
Breeder: 213984 - HADDEN SIMMENTAL

Birth Date: 2014-10-16
Original Issue: 2015-06-16

BOLT - 2021-04-27

EPD	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
15.3	-1.0	82.4	115.8	0.21	9.0	17.8	59.0	15.6	13.3	24.7	-0.40	0.43	-0.067	0.93	-0.40	155.9	90.7	
±2.65	±0.51	±3.75	±6.68	±0.007	±4.66	±7.62	±6.41	±4.62	±3.15	±6.75	±0.11	±0.133	±0.021	±0.185	±0.2			
ACC	0.66	0.83	0.77	0.74	0.74	0.41	0.36	0.47	0.35	0.37	0.65	0.46	0.49	0.47	0.57	0.20	10	10
%	10	10	30	45	75	10	95	65	60	25	70	65	5	95	40	20	10	10

Pedigree Color HPS

CNS DREAM ON L186	CANSM - 632589	2144976	PP
HTP/SVF DURACELL T52		2392068	BB
HTP SVF HONEYDEW		2140238	P
THSF LOVER BOY B33		2983443	BH PP
SVF/NJC BUILT RIGHT N48	CANSM - 687147	2225381	B PP
RP/MP RIGHT TO LOVE 015U		2434417	
PCC QUEENS VALENTINE R9		2293348	P

ASA #: 3658592
Registered

WHF/JS/CCS DOUBLE UP G365

Black (Homozygous Black)
Polled (Homozygous Polled)

Tattoo: G365
Left Ear

Frozen Embryo Bull

PB SM

PQB GE

TraitTrac
(Check available results)

Owner: 004561 - ALLEN DVM, HENRY E
Breeder: 311500 - STEENHOEK, CHESNEY

Birth Date: 2019-04-08
Original Issue: 2020-10-29

BOLT - 2021-04-27

EPD	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
16.0	-1.3	68.9	87.2	0.11	8.1	22.4	56.8	12.9	11.3	6.4	-0.47	-0.07	-0.070	0.90	±	118.0	70.8	
±4.6	±1.62	±8.8	±14.14	±0.015	±6.08	±10.12	±9.2	±5.04	±3.55	±10.23	±0.13	±0.148	±0.025	±0.241				
ACC	0.41	0.46	0.46	0.45	0.45	0.23	0.15	0.24	0.29	0.29	0.47	0.36	0.43	0.37	0.44			
%	4	10	80	99	99	15	60	75	90	50	99	30	95	95	45		75	80

Pedigree Color HPS

W/C EXECUTIVE ORDER 8543B		2900283	BH PP
W/C DOUBLE DOWN 5014E		3336150	BB PP
W/C MISS WERNING 5014C		3211676	BB PP
WHF/JS/CCS DOUBLE UP G365		3658592	BB PP
CCR WIDE RANGE 9005A		2725666	BB PP
WHF SUMMER 365C		3118556	BB PP
WHF ANDIE 365A		2860142	BB PP