2022 TJSSA State Futurity
Genetic Evaluation Quiz
Senior 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.

1. Within Contemporary Group B, the calves sired by SimAngus™ Bull A300 had an average WW ratio of 94, and the calves sired by Simmental Bull C980 had an average WW ratio of 107. Assuming you find similar data across many contemporary groups, which of the following statements should you definitely expect to be true?
   a. A300 will have a WW EPD that ranks higher.
   b. C980 will have a WW EPD that ranks higher.
   c. A300 will have a more accurate WW EPD.
   d. C980 will have a more accurate WW EPD.
   e. Sires of different breed compositions cannot be directly compared within contemporary groups.

2. Most reproductive traits, such as Calving Interval and Stayability, are:
   a. highly heritable
   b. moderately heritable
   c. lowly heritable
   d. negatively heritable

3. You have an old-school Simmental female that is heterozygous for both color coat and horned/polled. You breed her to a modern AI sire that is heterozygous black and homozygous polled. What is the likelihood that this mating will result in a polled red calf?
   a. 50%
   b. 37.5%
   c. 25%
   d. 12.5%
   e. 6.25%

4. In beef cattle production, which of the following is not an ERT?
   a. Birth Weight
   b. Weaning Weight
   c. Heifer Pregnancy
   d. Yield Grade

5. A commercial breeder is turning out her red SimAngus™ herd sire with a group of 27 open breeding age females. Seven of these females are homozygous black, 16 and heterozygous black, and 4 are red. Assuming 100% conception and all single births (no twins), how many red calves should she expect to have?
   a. 12
   b. 15
   c. 16
   d. 20

6. You purchased a halfblood SimAngus™ heifer to show during the 2022 show season. At minimum, how many generations are you from producing a Purebred Simmental replacement heifer through this female?
   a. 1
   b. 2
   c. 3
   d. 4

7. Simmental Bull D14 has a YW EPD that ranks in the 40th Percentile. Simmental Bull D37 has a YW EPD that ranks in the 15th Percentile. Based on this information, which of the following should you definitely expect to be true?
   a. Bull D14 will have a higher WW EPD.
   b. Bull D37 will have a higher WW EPD.
   c. Bull D14 will produce offspring with heavier adjusted yearling weights, on average.
   d. Bull D37 will produce offspring with heavier adjusted yearling weights, on average.

8. What does an individual BW ratio of 105 indicate?
   a. The calf was 5 pounds lighter than the average of its contemporaries at birth.
   b. The calf was 5 pounds heavier than the average of its contemporaries at birth.
   c. The calf was 5% lighter than the average of its contemporaries at birth.
   d. The calf was 5% heavier than the average of its contemporaries at birth.

9. As a herd sire matures and increases in size, what should you expect of his calf crops?
   a. They will be heavier at birth, on average.
   b. They will be heavier at weaning, on average.
   c. They will be heavier as yearlings, on average.
   d. All of the above.
   e. None of the above. You should expect no change from his previous calf crops.

10. A heifer is registered as a Purebred Simbrah, with two Purebred Simbrah parents. Through DNA, it is discovered that she does not qualify to her sire. Instead, she was sired by a Purebred Simmental bull. What is her status in Herdbook?
   a. Her registration is suspended until a second parentage test is completed.
   b. Her pedigree is corrected, and she remains registered as Purebred Simbrah.
   c. Her pedigree is corrected, and she is registered as 3/4 SM 1/4 BR.
   d. She is no longer allowed to be registered with ASA.

For questions 11 through 19, refer to the following sires. Information on these bulls can be found on the last sheet of your quiz.
Each bull may be used as an answer more than once.

   A. CLRS Dividend 405D
   B. ES Right Time FA110-4
   C. KBHR Cimarron F151
   D. LHT Top Tear 54H
   E. W/C Rest Easy 752G

11. Which bull should you expect to produce offspring with the most PWG?

12. Which bull is best suited for use in a program that sells its feeder calves by the pound to a backgrounder?

13. Which bull is best suited for use in a program that finishes cattle and markets them on a grid that rewards both grade and yield?

14. Which bull should you expect to produce crossbred calves that show the most value on the Feeder Profit Calculator?

15. Which of the following statements is not true?
   a. Between Bull A and Bull B, Bull A should produce offspring with more favorable disposition scores.
   b. Between Bull B and Bull C, Bull B is more likely to be labeled a 'big spread' sire.
   c. Between Bull C and Bull D, Bull C is more likely to produce offspring that grade USDA Prime.
   d. Between Bull D and Bull E, Bull D should produce daughters with more reproductive longevity.
   e. Between Bull E and Bull A, Bull E should produce terminal offspring with more meat tenderness.

16. True or False: One of Bull C's maternal grandparents must be homozygous black.
   a. True
   b. False

17. On a per cow basis, how much more valuable is Bull C than Bull D when used in a program in which the top end replacement heifers are retained and all other calves are fed out and sold on grade and yield?
   a. $61.30
   b. $74.30
   c. $13.00
   d. $51.10
   e. None of the above. Bull D has more value in this setting.

18. Which of the following statements regarding the STAY EPD of Bull A is true?
   a. It is 50% likely that the true value of this EPD is between 15.8 and 16.6.
   b. It is 67% likely that the true value of this EPD is between 12.2 and 20.2.
   c. It is 95% likely that the true value of this EPD is between 12.2 and 20.2.
   d. It is 99% likely that the true value of this EPD Is between 8.1 and 24.3.
   e. It is 100% likely that the true value of this EPD is between 8.1 and 24.3.

19. Compared to breed average, how many of these bulls should you expect to produce offspring with more fat opposite the ribeye at the time of harvest?
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5

20. At an upcoming bull sale, you are interested in Lot 9 as a calving ease bull. However, you are concerned about the possible change of his CE EPD, because he has not been genomic tested. Currently, his CE EPD is 14.9 with an accuracy of 0.2. If the breeder/seller had done genomics on him, that accuracy would be at least 0.4. How would this impact the possible change of Lot 9's CE EPD?
    a. It would decrease the possible change value by 3.0 points.
    b. It would decrease the possible change value by 1.5 points.
    c. It would decrease the possible change value by 0.8 points.
    d. Not enough information is available.

21. Your Purebred Simmental show heifer has an API value of 138.4. Based on the information available to you, you can confidently say that she ranks in the _____ of the breed for API.
    a. Top 10%
    b. Top 25%
    c. Top 30%
    d. Top 35%
    e. Top 45%

22. Genetic correlation is expressed on a scale from:
    a. -1 to 1
    b. 0 to 1
    c. 0 to 100
    d. 1 to 100

23. In the early 2010s, a long-term study by Oklahoma State University showed that selection for bulls with _____ resulted in daughters that produced calves with heavier weaning weights at the expense of the cows' body condition scores and reproductive efficiency.
    a. high MWW EPDs
    b. high ADG EPDs
    c. high Milk EPDs
    d. high WW EPDs

24. With 1660 progeny reported, which popular AI sire ranked as the most used bull for 2020?
    Note: This list was published in the March 2022 issue of the Register. *It recognizes progeny reported during the 2020 calendar year.*
    a. TJ Franchise 451D
    b. CCR Cowboy Cut 5048Z
    c. Hook's Eagle 6E
    d. WS Proclamation E202
    e. WLE Copacetic E02

25. Tag 132 has a great granddam that is a Purebred Angus cow. Neither this Angus cow nor any of her descendants have been tested for genetic defects, but the cow family has never produced a calf with signs of a defect. Assuming she is registered with ASA, what is the status of Tag 132 in TraitTrac?
    a. Population Risk
    b. Foundation Risk
    c. Assumed Free
    d. Pedigree Free
    e. She has no defect status in TraitTrac. Her percentage of Angus blood is below the minimum threshold for monitoring.

26. What does it mean to say a bull is proven?
    a. His EPDs have been enhanced by a genomic test.
    b. He ranks high for the specific trait or traits being discussed.
    c. Most or all of his EPDs are better than breed average.
    d. His EPDs have high accuracies.

27. Bull A has a PAP EPD of -1.5. Bull B has a PAP EPD of 0.8. Assuming both are qualified AI sires, which of these bulls is better suited for use on cows raised in high elevation?
    a. Bull A
    b. Bull B
    c. Neither. There is no such thing as a PAP EPD.
    d. Not enough information is available.

28. The average adjusted yearling weight for a contemporary group of sale bulls is 1300 pounds. Lot 3 was one of the high performing bulls, with an adjusted yearling weight of 1456 pounds. What is his yearling weight ratio?
    a. 106
    b. 112
    c. 118
    d. 126
    e. 156

29. In order to qualify for the 50% off genomic and parentage testing offered through ASA's Calf Crop Genomics project, what percentage of the calf crop must a participating breeder test?
    a. 100%
    b. 93%
    c. 90%
    d. 80%

30. Simbrah Bull G713 has a MCE EPD of 4.2. Simbrah Bull F47 has a MCE EPD of 7.6. Based on this information, which of the following statements is definitely true?
    a. You should expect Bull F47 to produce a higher percentage of unassisted births when used on mature cows.
    b. You should expect Bull F47 to produce a higher percentage of unassisted births when used on heifers.
    c. You should expect a higher percentage of F47's daughters to calve without assistance as heifers.
    d. All of the above.

TIEBREAKER QUESTIONS
Questions 31 through 35 are tiebreaker questions <u>only</u>.

31. According to ASA's recommendations, what is the best practice when recording weaning weights for a contemporary group?
    a. Take weaning weights on all calves on the same day, when the majority of calves are 160 to 250 days of age.
    b. Take weaning weights on 2-3 separate days, weighing each calf when it is 180-220 days of age.
    c. Take weaning weights on many days, weighing each calf when it is 200-210 days of age.
    d. Take weaning weights on each calf when it is exactly 205 days of age.

32. According to the International Genetic Solutions website, there are more than 20 million animals in the IGS collaborative database. Approximately how many of these animals have been genotyped?
    a. 750,000
    b. 500,000
    c. 350,000
    d. 150,000

33. Which of the following requires DNA testing for parental validation before it can be registered?
    a. Natural calf out of your donor cow
    b. ET calf resulting from an embryo you purchased
    c. Bull calf that you hope to later collect semen from
    d. Calf born out of a bred heifer you purchased
    e. All of the above

34. ASA and IGS recently analyzed over 140,000 daughters from bulls with high-accuracy Stayability EPDs. What was the primary finding of this analysis?
    a. Daughters of bulls in the Top 25% for STAY are more than 60% likely to remain in the herd at six years of age.
    b. Daughters of bulls in the Top 25% for STAY are more than twice as likely to remain in the herd at six years of age compared to daughters of bulls in the Bottom 25%.
    c. Daughters of bulls in the Top 25% for STAY average almost five more calves in their lifetime compared to daughters of bulls in the Bottom 25%.
    d. While there was a significant difference in reproductive longevity between daughters of bulls in the Top 25% and bulls in the Bottom 25% for STAY, there was no significant difference between daughters of bulls in the middle quartiles.

35. What is the term for the genetic phenomenon in which the expression of one gene is affected by – or masked by – alleles from a second gene? The polled/scurred relationship is an example of this.
    a. Polygenesis
    b. Overdominance
    c. Complementarity
    d. Epistasis

CLRS DIVIDEND 405D

ASA #: 3097854
Registered
AMERICAN SIMMENTAL

Black *(Homozygous Black)*
Polled *(Homozygous Polled)*

Tattoo: CLRS 405D
Left Ear

Single Birth Bull | PB SM | PQB GE | **TraitTrac**
(Check available results)

Owner: 330184 - APEX CATTLE-CLEAR SPRINGS CATTLE
Breeder: 287534 - CLEAR SPRINGS CATTLE CO

Birth Date: 2016-01-31
Original Issue: 2016-08-25

BOLT - 2022-05-10

	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
EPD	11.3	0.8	83.3	130.5	0.30	4.9	10.5	52.1	16.2	14.7	28.2	-0.20	0.15	-0.048	0.50	-0.53	136.8	81.5
PC	±1.72	±0.27	±1.96	±3.6	±0.004	±2.77	±4.17	±3.51	±4.05	±2.15	±4.83	±0.09	±0.073	±0.016	±0.133	±0.2		
ACC	0.78	0.91	0.88	0.86	0.86	0.65	0.65	0.71	0.43	0.57	0.75	0.55	0.72	0.60	0.69	0.20		
%	45	35	30	20	15	70	99	95	55	15	55	99	40	99	99	1	35	35

− Pedigree +

			Color	HPS
	HOOK`S YELLOWSTONE 97Y	2612546	BB	PP
CLRS AFTER SHOCK 604 A		2735656	BB	PP
	HOOKS SARITA 4S	2334127	BB	PP
CLRS DIVIDEND 405D		3097854	BB	PP
	GW PREMIUM BEEF 021TS	*USAAR - 3358325* 2370545	BB	PP
CLRS BONNIA 405 B		2853921	BH	PP
	CLRS ZINNIA 200 Z	2642011	R	PP

ES RIGHT TIME FA110-4

ASA #: 3481590
Registered
AMERICAN SIMMENTAL

Black *(Homozygous Black)*
Polled *(Homozygous Polled)*

Tattoo: FA110-4
Right Ear

Fresh Embryo Bull | PB SM | PQB GE | **TraitTrac**
(Check available results)

Owner: 214702 - CK CATTLE COMPANY
Breeder: 004441 - EICHACKER SIMMENTALS

Birth Date: 2018-02-15
Original Issue: 2018-10-29

BOLT - 2022-05-10

	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
EPD	6.6	3.5	88.6	145.5	0.36	2.2	22.8	67.0	18.4	10.4	38.0	-0.32	0.30	-0.073	0.79	-0.32	142.6	86.6
PC	±3.28	±0.84	±5.38	±8.48	±0.009	±5.21	±9.04	±7.74	±4.76	±3.05	±8.49	±0.12	±0.12	±0.024	±0.202	±0.237		
ACC	0.58	0.72	0.67	0.67	0.67	0.34	0.24	0.36	0.33	0.39	0.56	0.42	0.54	0.41	0.53	0.05		
%	95	90	15	10	2	99	60	30	30	65	20	95	15	75	75	65	25	20

− Pedigree +

			Color	HPS
	HTP SVF IN DEW TIME	*CANSM - 671317* 2285555	BB	PP
WELSHS DEW IT RIGHT067T		2403649	BB	PP
	SVF/NJC SENERITA N29	2204433		P
ES RIGHT TIME FA110-4		3481590	BB	PP
	REMINGTON LOCK N LOAD54U	*CANSM - 709087* 2503661	BH	PP
ES A110		2752773	BB	PP
	ESU56	2448632	BB	PP

KBHR CIMARRON F151

ASA #: 3499731
Registered
AMERICAN SIMMENTAL
EID:840003150639935

Black *(Homozygous Black)*
Polled *(Homozygous Polled)*

Tattoo: F151
Left Ear

Frozen Embryo Bull | PB SM | PQB GE | **TraitTrac**
(Check available results)

Owner: 004086 - BRIDLE BIT SIMMENTALS
Breeder: 066206 - KELLERS BROKEN HEART RANCH

Birth Date: 2018-03-22
Original Issue: 2019-03-27

BOLT - 2022-05-10

	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
EPD	15.1	-4.2	61.0	95.1	0.21	11.4	26.2	56.6	22.3	12.8	25.2	-0.33	0.87	-0.023	1.05	-0.39	193.7	94.5
PC	±2.73	±0.72	±4.4	±6.68	±0.007	±4.74	±8.45	±7.38	±4.19	±3	±7.14	±0.1	±0.114	±0.02	±0.176	±0.237		
ACC	0.65	0.76	0.73	0.74	0.74	0.40	0.29	0.39	0.41	0.40	0.63	0.48	0.56	0.51	0.59	0.05		
%	10	1	99	95	75	1	30	80	2	35	65	90	1	99	20	25	1	4

− Pedigree +

			Color	HPS
	HOOKS SHEAR FORCE 38K	*CANSM - 684162* 2081939	BH	PP
HOOK`S BEACON 56B		*USAAR - 4271289* 2854180	BB	PP
	HOOKS ZAFIRAH 41Z	2802160	BH	PP
KBHR CIMARRON F151		3499731	BB	PP
	WS HOT BEEF X38	2548377	B	PP
BAR CK MS X38 106Z		2682358	BB	PP
	BAR CK MS MEAT MKR 323T	2378699	B	P

LHT TOP TEAR 54H

ASA #: 3805518	**LHT TOP TEAR 54H**	**Tattoo**: 54H
Registered	Black *(Homozygous Black)*	*Both Ears*
AMERICAN SIMMENTAL	Polled	

Single Birth Bull   PB SM   PQS GE   **TraitTrac** (Check available results)

Owner: 345091 - KRIEGEL, CURTIS   Birth Date: 2020-01-10
Breeder: 002467 - TRAUERNICHT SIMMENTALS   Original Issue: 2020-11-21

BOLT - 2022-05-10

	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
EPD	11.4	3.7	94.3	135.5	0.26	5.7	34.9	82.0	21.4	15.7	43.8	-0.41	-0.08	-0.105	0.89	-0.38	132.4	81.5
PC	±4.37	±1.53	±8.64	±13.62	±0.015	±6	±10	±8.95	±5.18	±3.1	±10.04	±0.12	±0.143	±0.024	±0.232	±0.242		
ACC	0.44	0.49	0.47	0.47	0.47	0.24	0.16	0.26	0.27	0.38	0.48	0.38	0.45	0.41	0.46	0.03		
%	45	90	10	15	40	50	2	1	4	10	10	60	95	20	50	30	45	35

− Pedigree +

			Color	HPS
TJ MAIN EVENT 503B		2891336	BB	PP
TJ TEARDROP 783F		3459734	BB	PP
TJ MS 38W		2529932	BH	PP
LHT TOP TEAR 54H		3805518	BB	P
CCR COWBOY CUT 5048Z	CANSM - 790139	2703910	BB	PP
LHT MS COWBOY CUT 169E		3315800	B	P
LHT MS RANCH HAND 192W		2506289	B	P

W/C REST EASY 752G

ASA #: 3644912	**W/C REST EASY 752G**	**Tattoo**: 752G
Registered	Black *(Homozygous Black)*	*Left Ear*
AMERICAN SIMMENTAL	Polled *(Homozygous Polled)*	

Single Birth Bull   PB SM   PQS GE   **TraitTrac** (Check available results)

Owner: 355120 - WESTERN CATTLE SOURCE SELECT SIRES   Birth Date: 2019-02-27
Breeder: 003773 - WERNING, DALE   Original Issue: 2019-12-03

BOLT - 2022-05-10

	CE	Brth	Wean	Year	ADG	MCE	Milk	MWW	Stay	Doc	CW	YG	Marb	BF	REA	Shr	API	TI
EPD	16.4	-2.9	80.8	127.0	0.29	8.7	30.8	71.1	14.1	13.6	31.7	-0.45	0.17	-0.083	1.06	-0.30	147.5	88.9
PC	±3.43	±0.96	±6.36	±10.54	±0.011	±5.69	±10.23	±8.83	±5.18	±3.15	±9.46	±0.12	±0.138	±0.024	±0.224	±0.235		
ACC	0.56	0.68	0.61	0.59	0.59	0.28	0.14	0.27	0.27	0.37	0.51	0.39	0.47	0.39	0.48	0.06		
%	3	2	40	25	20	10	10	15	75	25	40	35	40	55	15	75	20	15

− Pedigree +

		Color	HPS
HOOK`S BOZEMAN 8B	2854480	BB	PP
MR SR 71 RIGHT NOW E1538	3325668	BB	PP
MISS SR C1538	3078408	BB	PP
W/C REST EASY 752G	3644912	BB	PP
W/C EXECUTIVE ORDER 8543B	2900283	BH	PP
W/C MISS WERNING 752E	3479632	B	PP
W/C MISS WERNING 5343C	3045545	BB	PP

American Simmental Association Possible Change Table

Acc	CE	BW	WW	YW	MCE	Mlk	MWW	Stay	CW	YG	Mrb	BF	REA	WB
0.0	7.8	3.0	16.3	25.7	7.9	11.9	12.1	7.1	19.3	0.20	0.26	0.04	0.43	0.25
0.1	7.0	2.7	14.7	23.1	7.1	10.7	10.9	6.4	17.4	0.18	0.23	0.04	0.39	0.23
0.2	6.2	2.4	13.0	20.6	6.3	9.5	9.7	5.7	15.4	0.16	0.21	0.03	0.34	0.20
0.3	5.4	2.1	11.4	18.0	5.5	8.3	8.5	4.9	13.5	0.14	0.18	0.03	0.30	0.18
0.4	4.7	1.8	9.8	15.4	4.7	7.1	7.3	4.2	11.6	0.12	0.16	0.02	0.26	0.15
0.5	3.9	1.5	8.2	12.9	3.9	6.0	6.1	3.5	9.7	0.10	0.13	0.02	0.22	0.13
0.6	3.1	1.2	6.5	10.3	3.1	4.8	4.8	2.8	7.7	0.08	0.10	0.02	0.17	0.10
0.7	2.3	0.9	4.9	7.7	2.4	3.6	3.6	2.1	5.8	0.06	0.08	0.01	0.13	0.08
0.8	1.6	0.6	3.3	5.1	1.6	2.4	2.4	1.4	3.9	0.04	0.05	0.01	0.09	0.05
0.9	0.8	0.3	1.6	2.6	0.8	1.2	1.2	0.7	1.9	0.02	0.03	0.00	0.04	0.03
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00