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Coaches' Bulletin

Q&A

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As local competition wraps up and we near the national tournament, we've had many *Equations* questions. **Suggestion to coaches:** Try these situations on your players.

Q1 A player selects Number of Factors, but there are no x cubes in Resources and no wild cube. No one charges illegal procedure, and the Goal is set. As soon as the Goal is set, a player other than the Goal Setter notices the illegal variation and challenges Impossible. Is this an illegal challenge since the Goal is NOT an illegal Goal? (Deborah Tjin, Colorado)

A1 The general principle is this: *If a variation that has no application in the shake (as above or 0 wild when no 0's are rolled), the variation is ignored if no opponent caught the mistake.* Therefore, the challenge is legal and is worked out as usual. Presumably, the Goal-setter will write a correct Solution (with the Third Party probably doing so as well).

A slightly different situation is this: A player selects "Base Seven" or "Multiple of 12," neither of which uses a correct value of the base or k . As above, no one charges illegal procedure, and a Goal is set. The general principle is the same— ignore the errant variation. If a player writes an Equation that is in Base Seven, that player is incorrect.

Q2 The Decimal Point variation says that the \wedge (or $*$) "may be combined with at most three digits to form a numeral." Does that mean that 125^\wedge is legal even though three-digit numerals are not normally allowed? (Senay Tascioglu, Michigan)

A2 Yes, three-digit numerals are allowed in the Goal or Solution but only with the decimal point. So all these expressions are legal: $\wedge 125$, $1^\wedge 25$, $12^\wedge 5$, and 125^\wedge . While on this subject, it is good to mention that Appendix A lists the preferred way of writing decimal expressions in the Equation as .125, 1.25, 12.5, and 125. To avoid ambiguity with \wedge meaning raise to a power.

Propaganda Panel Thinking

Now that all leagues have had their *Propaganda* tournament, we can look back at the Panel's thinking behind several of the examples. Even if the example was for EI/Mid, Jr/Sr can benefit and vice-versa.

The first draft of the EI/Mid examples put together by the editor included this one in Section C: After the man was arrested for defrauding customers, one of his victims said: "When I met him, he was very nice and made his proposal in a soothing voice. Then he walked out the door with my money, and I never got what I purchased."

The author's opinion was Manner. But when each panelist responded via email, only one agreed with the author. The other two selected No Technique. One wrote: "I thought at first it might be #2 Manner, but it seems like he is just stating facts about the incident. The con man has to be smooth with a soothing voice in order to trick the victim." The other wrote, "Just describing the situation, with no judgment; hints that it could be Manner also."

So the example was revised to this: Elderly woman speaking to a friend: "When I met him, he was very nice and made his proposal in a soothing voice. Then he walked out the door with my money, and I never got what I purchased." Each panelist now chose Manner as the clear technique for the revision.

Here's a Jr/Sr example that illustrates how the *Propaganda Guide* is used to settle disputes among the panelists:

Senator: "We are committed to providing the American people with affordable health care."

Reporter: "Senator, what do you mean by 'affordable health care'?"

Senator: "You obviously didn't read the bill that I filed last week. Next question?"

Author's opinion: Abstract Terms

One panelist put No Technique. Another said Abstract Terms or No Technique.

Analysis: The panelist who put No Technique wrote: "At first I wanted to say Abstract Terms, but as I thought about it, it could be No Technique. The bill that was filed last week, did it contain a clear explanation of what the Senator means by affordable health care? Perhaps it does, perhaps it doesn't; there's no way to tell with the information given. If you are going for

Q3 If Decimal Point and Factorial are both chosen, may we apply a factorial to decimals that have a whole number value such as $3^0!$? (Libby Michalik, Pennsylvania)

A3 Yes but be careful. If you write $3^0!$, an opponent may try to interpret the expression as $3^{(0)!}$, which is 3^1 or 3 rather than $(3^0)! = (3.0)! = 6$. The Decimal point variation states: "When used as a decimal, ^ (or *) takes precedence over all other operations." So $3^0!$ must be interpreted as $3!$ even if the Equation-writer doesn't use the decimal point rather than ^ (or *).

A practice *On-Sets* Judges Test, with Solution Key, is posted at ag10a.org. Link to it via Games Played > On-Sets > Rules and Documents. Judges certification is closed for this school year but the test can prepare someone seeking certification or recertification for 2018-19.

New Math Rules Voting Procedure

At last year's National Tournament, the Math Rules Meeting produced a surprising result. A proposal was made that all certified judges in *Equations* and/or *On-Sets* vote on proposals in the games in which they are certified. The proposal drew such instant support that it was implemented immediately. The five-person Math Rules Committee was abolished.

In Year Two of the new procedure, the proposal process will be formalized as follows:

1. Any certified judge may make a proposal via email to the Math Chair by **April 15**. The proposal must include a rationale and the division(s) to which it applies.
2. The list of proposals received by the deadline will be distributed via email to all certified judges. Discussion can take place within each league and on the Math Rules Slack online.
3. The proposals will be discussed at the Math Rules Meeting at nationals. As a result of that discussion, a proposal may be revised or withdrawn.
4. All certified judges will vote by June 1 on all remaining proposals that affect the game(s) and division(s) they are certified to judge.

EQUATIONS WARM-UPS

A good way to prepare Equations players for an imminent local tournament or for the national tournament is to do a list of warm-up exercises that quickly review a wide range of variations and strategies.

One such warmup sheet is attached below along with the Solution Key.

No Technique, I like it, but it needs a little more fine-tuning. Maybe adding something, like "the bill that I filed last week which answers your question in detail. Next question, please?" The other dissenter put, "No Technique if everything was explained in the bill, and the reporter had access to the bill."

Let's go to the *Guide*. Professor Moulds in his book from which the game developed: "The technique of abstract terms occurs when an arguer employs a word for which he may have meaning in the form of other words, *but the arguer is unable to identify the concrete facts to which the word supposedly refers.*" (End of Moulds quote.)

"Expanded Definition:

- The speaker cannot back up the term he used with an example.
- The speaker sidesteps or dodges the question when asked for a concrete example. He may ridicule the questioner or simply change the subject.
- The speaker gives a 'glittering generality' but offers no specifics. How can someone be criticized when he offers no specifics?"

Isn't the speaker in this example dodging the question? All the Senator had to do was give a summary of what "affordable health care" means, not the details of how the bill will achieve that. You could conclude the Senator doesn't know what's in the bill.

The *Guide* also says this. "If the speaker gives one or more concrete examples for an abstract term, then the answer is No Technique." Referring the questioner to a source for answering the question is not grounds for No Technique.

Proposed revision: **None**

All three panelists accepted Abstract Terms as the technique based on the explanation in the *Guide*. The example was read at local tournaments in its original form – word-for-word.

New Social Studies Questions Procedure

Questions in *Presidents*, *Theme*, and *Current Events* for the national tournament are being subject to a four-phase process.

1. Each game's editor puts together the questions sets for El/Mid and Jr/Sr.
2. Each set is sent to at least two reviewers who fact-check, pinpoint ambiguities, suggest changing the order of the clues (for *Presidents*), offer different choices (for *Theme* and *Current Events*), and so on.
3. Each editor revises the questions based on the feedback. Each brings a record of the changes that were made to the national tournament.
4. In Knoxville, the reader of each set reviews the questions in the presence of the editor an hour before the round and offers suggestions for further changes.

EQUATIONS WARMUPS NATIONALS 2018

ALL DIVISIONS

Give all values of each Goal.

<u>Variations</u>	<u>Goal</u>	<u>Values</u>	<u>Variations</u>	<u>Goal</u>	<u>Values</u>
1. Sideways	$40+01$	_____	2. 0 wild	$(0-0)\div 0$	_____

Give a **three-cube** Solution for each Goal.

<u>Variations</u>	<u>Goal</u>	<u>3-cube Solution</u>	<u>Variations</u>	<u>Goal</u>	<u>3-cube Solution</u>
3. Sideways	$40\div 84$	_____	4. Sw, Ud	$14\div 9$	_____

With Factorial, give all **whole number** values of each Goal.

5. $\sqrt{3}\times 24$ _____ 6. $\sqrt{6}\times 45$ _____ 7. $5\div 3$ _____
8. With Sideways, write a **five-cube** Solution for this Goal: $62\div 64$ _____

ELEMENTARY ONLY

9. With Average and Sideways, write a **three-cube** Solution for this Goal: $7-2$ _____
10. With Average, give all values of this Goal. $7+3+6$ _____

ELEMENTARY AND MIDDLE ONLY

Give all values of each Goal.

<u>Variations</u>	<u>Goal</u>	<u>Values</u>	<u>Variations</u>	<u>Goal</u>	<u>Values</u>
11. Decimal pt.	$^50\times 54$	_____	12. Percent	$25\sqrt{\sqrt{64}}$	_____

Give a **three-cube** Solution for each Goal.

13. Decimal pt.	$2^{\wedge}25$	_____	14. %, Sw	$2\sqrt{\wedge}80$	_____
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MIDDLE, JUNIOR, AND SENIOR ONLY

Write a two- or three-cube Solution for each Goal.

<u>Variations</u>	<u>Goal</u>	<u>Solution</u>	<u>Variations</u>	<u>Goal</u>	<u>Solution</u>
15. ---	$12\sqrt{81}$	_____	16. Sideways	$1+40\sqrt{64}$	_____
17. Sideways	$91\div 28$	_____	18. Factorial	$\sqrt{10}\times 28$	_____

Give the smallest positive base ten value of a solution for each Goal.

19. $k 7$, base 8	75	_____	20. $k 11$, base 9	35×28	_____
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JUNIOR AND SENIOR ONLY

Give all base ten values of each Goal.

21. # factors	$\times 36^{\wedge}5$	_____	22. # fac, base 12	$\times 7^{\wedge}x\sqrt{5}$	_____
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Give all base ten **integer** values of each Goal.

23. ---	$\sqrt{2+\sqrt{\sqrt{8}}}$	_____	24. base 11	$\wedge 4\sqrt{59}$	_____
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Give the smallest positive base ten value of a Solution for each Goal.

25. $k 9$, base 8	$\sqrt{31^{\wedge}76}$	_____	26. $k 7$	$(9^{\wedge}6)\div 5$	_____
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SENIOR ONLY

27. With 0 wild and Imaginary, give all integer values of this Goal: $3|0|9$ _____
28. With Base 12 and Decimal in Goal, what integer does the Goal $6\div 9$ equal? _____

EQUATIONS WARMUPS NATIONALS 2018 – SOLUTION KEY

ALL DIVISIONS

Give all values of each Goal.

<u>Variations</u>	<u>Goal</u>	<u>Values</u>	<u>Variations</u>	<u>Goal</u>	<u>Values</u>
1. Sideways	40 + 01	<u>14÷45</u>	2. 0 wild	(0-0)÷0	<u>0</u>

Give a **three-cube** Solution for each Goal.

<u>Variations</u>	<u>Goal</u>	<u>3-cube Solution</u>	<u>Variations</u>	<u>Goal</u>	<u>3-cube Solution</u>
3. Sideways	40÷84	<u>3+7</u>	4. Sw, Ud	14÷ 9	<u>4-3</u>

With Factorial, give all **whole number** values of each Goal.

5. $\sqrt{3} \times 24$	<u>12</u>	6. $\sqrt{6} \times 45$	<u>180</u>	7. $5 \div 3$	<u>20, 40</u>
8. With Sideways, write a five-cube Solution for this Goal: $62 \div 64$ <u>1-(4X00)</u>					

ELEMENTARY ONLY

9. With Average and Sideways, write a **three-cube** Solution for this Goal: $7 - \sqrt{9+4, 8+5, 7+6}$
10. With Average, give all values of this Goal. $7+3+6$ 8, 23/4

ELEMENTARY AND MIDDLE ONLY

Give all values of each Goal.

<u>Variations</u>	<u>Goal</u>	<u>Values</u>	<u>Variations</u>	<u>Goal</u>	<u>Values</u>
11. Decimal pt.	50×54	<u>27</u>	12. Percent	$25 \sqrt{64}$	<u>2</u>

Give a **three-cube** Solution for each Goal.

13. Decimal pt.	2^{25}	<u>9÷4</u>	14. %, Sw	$\sqrt{80}$	<u>2÷5</u>
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MIDDLE, JUNIOR, AND SENIOR ONLY

Write a two- or three-cube Solution for each Goal.

<u>Variations</u>	<u>Goal</u>	<u>Solution</u>	<u>Variations</u>	<u>Goal</u>	<u>Solution</u>
15. ---	$12 \sqrt{81}$	<u>$3\sqrt{3}$</u>	16. Sideways	$1 + \sqrt{64}$	<u>8 x 4</u>
17. Sideways	$91 \div 28$	<u>$3 + \sqrt{4}$</u>	18. Factorial	$\sqrt{10} \times 28$	<u>7! x 2</u>

Give the smallest positive base ten value of a solution for each Goal.

19. $k 7$, base 8	75	<u>5</u>	20. $k 11$, base 9	35×28	<u>40</u>
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JUNIOR AND SENIOR ONLY

Give all base ten values of each Goal.

21. # factors	$x 36^5$	<u>121, 9⁵</u>	22. # fac, base 12	$x 7^x \sqrt{5}$	<u>8, 548</u>
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Give all base ten **integer** values of each Goal.

23. ---	$\sqrt{2 + \sqrt{8}}$	<u>4</u>	24. base 11	$\sqrt[4]{59}$	<u>2</u>
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Give the smallest positive base ten value of a solution for each Goal.

25. $k 9$, base 8	$\sqrt{31^7 6}$	<u>1</u>	26. $k 7$	$(9^6) \div 5$	<u>19/5</u>
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SENIOR ONLY

27. With 0 wild and Imaginary, give all integer values of this Goal: $3|0|9$ 0, 3, ±27, ±54, ..., ±243
28. With base 12 and decimal in Goal, what integer does the Goal $6 \div 9$ equal? 8