

**ON-SETS**

**SITUATIONS**

**2015-16**

## Guidelines for Officials for Judging the Correctness of On-Sets Solutions

The On-Sets Tournament Rules state that a Solution is correct unless an *opponent* shows that it violates one of the requirements for a correct Solution. Judges should therefore resist any attempt by a Solution-checker to get the judge to do the checker's job. Yet a decision must be made concerning the correctness of the Solution. The following guidelines are offered to help judges deal with situations where an opponent disputes a Solution but does not present a specific objection with which the judge can agree or disagree.

1. An official should never check whether a Solution uses the cubes correctly. However, the judge can answer specific questions about the cubes. Here are three examples.
  - a. Do all the cubes in Required have to be in the Restriction part? [Yes]
  - b. If B is wild and stands for R in one place in the Solution, does it have to stand for R in another place? [Yes]
  - c. After a Now challenge, may a Solution contain two cubes from Resources? [No]
2. If players cannot agree on the mathematical correctness of a Solution, the judge should tell the Solution-checker (or one of the checkers) to work out the Solution in the judge's presence. If there is a Restriction, the checker turns over any cards removed from the Universe, then selects the cards named by the Set-Name. The Solution-writer can object to the checker's manipulation of the cards at any point, and the third player (if there is one) may point out an error or help manipulate the cards. The judge oversees the process and settles specific controversies. The end result should be the correct number of cards in the Set-Name so that it is obvious whether the Solution equals the Goal. However, the process might be complicated by situations like the following ones.
  - a. The checker makes a mistake when working out the Solution. *The judge must not point out an error in the checker's work if no player notices the error.*
  - b. The Solution is ambiguous. The judge must not point this out. Since it is the checker who works out the Solution in the process suggested here, the checker can interpret the Solution so that it does *not* equal the Goal. If the checker interprets the Solution so that it equals the Goal, the judge must not point out the alternate (incorrect) interpretation. However, the third player may do so.
  - c. The players report that the checker has worked out the Solution and gets a different result from the writer. They want the judge to work out the Solution to settle the matter. In this case, the judge may do so.
  - d. The Solution-writer may volunteer to work out his own Solution. If this is acceptable to the checker(s), the judge may allow the writer to do so. If no opponent finds anything wrong with the way the writer works out the Solution and it equals the Goal, then opponents must accept the Solution. *The judge must not point out an error in the Solution-writer's work if no opponent notices the error.*
  - e. The Solution-checker may not be able to work out the Solution using the cards even with some prompting from the judge. Then the judge should ask the writer to demonstrate the Solution. If the writer is also confused, the judge may have to intervene.

## Section **OS-A**: Beginning a Shake And Selecting Variations

**NOTE A.** Many situations involving combinations of variations are covered by the comments following the variations in Section **XIII** of the On-Sets Tournament Rules.

**B.** Situations **A1-A19** in Section **A** of the Equations part of this manual also apply to On-Sets.

- A1** Situation During the first minute of the shake, the Goal-setter insists that the card dealer must deal the cards before the cubes are rolled (or vice-versa).  
Ruling This is incorrect. The two actions may occur in either order. Each player must complete his task within the one minute time limit.  
Penalty -1 for the Goal-setter if he does not roll the cubes within the one-minute time limit; -1 for the dealer if he does not deal the correct number of cards within the one-minute time limit.
- A2** Situation Depending on the division, the dealer puts out too few cards. The one-minute time limit expires (and a ten-second warning has been given).  
Ruling Illegal procedure; the dealer has an additional minute to add one or more cards to the Universe so that it contains a correct number of cards.  
Penalty The dealer loses one point; if the dealer does not complete the Universe correctly within an additional minute, the dealer loses another point and the dealing of the Universe moves to the player to the left of the dealer, which is the Goal-setter.  
Comment If the deal is transferred to the Goal-setter, all cards previously dealt are picked up, the Goal-setter reshuffles the cards, and deals a correct number of cards. Note that opponents are under no obligation to tell the dealer the correct number of cards that may be dealt. Nor should an official to inform the dealer (unless all players at the table agree they want to know).
- A3** Situation The dealer puts out too many cards in the Universe.  
Ruling Illegal procedure; the dealer must remove one or more cards from the Universe so that it contains a correct number of cards. However, in general, cards dealt must remain in the Universe (just as a cube played to the mat must remain where it is played). Therefore, the dealer may remove only the minimum number of cards necessary. For example, in Elementary, Middle, or Junior Division, if the dealer dealt 14 cards, then only the last two may be removed to leave 12, the maximum number for these divisions.  
Penalty -1 for the dealer if he does not complete a correct Universe within the one-minute time limit.
- A4** Situation The dealer puts out too many or too few cards in the Universe. An opponent picks up the challenge block and challenges "Impossible."  
Ruling Illegal procedure; since no Goal has been set, no challenge can be made yet.  
Penalty -1 for the player attempting to challenge
- A5** Situation The dealer looks through the cards and deals selected ones.  
Ruling Illegal procedure; the dealer must shuffle the cards and deal from the top, just as a dealer of playing cards does. So this dealer must reshuffle and re-deal the cards.  
Penalty -1 for the dealer if a correct Universe is not redealt within the one-minute time limit

- A6** Situation The dealer does not shuffle all the cards before dealing. For example, the dealer does not put back into the deck the cards that were not dealt for the previous shake.  
 Ruling The shuffle is incorrect and must be done over with all the cards included.  
 Penalty -1 if the dealer's time expires before a correct deal is completed.
- A7** Situation One player selects B Wild. Another chooses Y Required. However, no Y cube is in Resources.  
 Ruling The second player's selection is illegal. Even if a wild cube has been chosen, the required cube variation demands that a Y *cube* be used in the Solution. A B cube standing for Y does not satisfy the Y Required variation.  
 Penalty The player selecting the illegal variation loses one point and must pick another variation within 15 seconds.  
 Comment The ruling is the same if both variations are chosen by the same player.
- A8** Situation A player selects Y Required when no Y is in Resources. No one charges illegal procedure and the next player makes a legal variation selection or sets the Goal. Then someone realizes that the Y Required selection was illegal.  
 Ruling The first player's illegal procedure has been insulated. However, the Y Required variation should be ignored for the shake. Solutions do *not* have to contain a Y cube.
- A9** Situation Player A picks Y Wild or Y Required when no Y was rolled. Player B selects a valid variation. Then an opponent realizes that A's selection was incorrect.  
 Ruling B's selection insulates A's illegal procedure. Therefore, A's selection stands but has no effect on the shake since there is no Y cube.  
 Penalty None  
 Comment If Y Required was called with no Y cube in Resources and the illegal variation is insulated, Y Required is set aside. So the Goal-setter should not call "no Goal," and no opponent should challenge "Impossible" if a Goal is set.
- A10** Situation (**E** only) The Goal-setter rolls the cubes without first setting out two V cubes and one ^ (or vice-versa).  
 Ruling The Goal-setter should turn over one or more Restriction cubes that were rolled so that two V and one ^ (or one V and two ^) are available.  
 Penalty -1 if the Goal-setter does not adjust the cubes properly before the one-minute time limit expires
- A11** Situation (**E** only) The Goal-setter rolls the cubes without first setting out two V cubes and one ^ (or vice-versa). No one notices the illegal procedure until variations are selected. Perhaps a Goal is set and one or more moves made before someone realizes the Goal-setter did not set the Resources properly.  
 Ruling The Goal-setter's illegal procedure of not setting the Resources properly is insulated when a valid variation is selected by the player to the left of the Goal-setter. (The Goal-setter's variation selection cannot insulate his own illegal procedure.) However, = and C cubes are not used in this division. So they should be treated like digit cubes and ignored or placed in Forbidden when someone realizes that the Goal-setter did not place them properly.

(Comment for **A11** on next page.)

Comment If an opponent notices that the Goal-setter did not set the Restriction cubes properly before variations are selected (and the illegal procedure has not been insulated), the Goal-setter must turn over any = or C cube that was rolled to obtain two V and one Δ (or vice-versa).

**A12** Situation (**EM** only) One player chooses “B Wild.” Another then picks U and \_\_ interchangeable even though neither cube is in Resources. Is the second player’s selection valid?

Ruling Yes, since a wild cube could be used for U or \_\_. So the interchangeable variation can affect the shake.

Comment The same ruling applies if, after a wild cube is chosen, a player selects V and Δ interchangeable when neither cube is in Resources. The ruling also applies if the same player picks both variations. The order in which they are selected by the player makes no difference.

**A13** Situation (**EM** only) One player selects U Wild. Another player (or the same player when picking two variations) selects U and \_\_ interchangeable. Are these variations contradictory?

Ruling No, they are not. If U is used just for U or \_\_, it need not be used consistently. However, if U is used for any other symbol, it must be used only for that symbol throughout the Solution.

Comment The same ruling applies to V (or Δ) Wild and V-Δ interchangeable.

**A14** Situation (**MJS** only) A player selects no null Restrictions. However, no = or C cube is in Resources.

Ruling This is an illegal selection; the player must pick another variation. The only exception would be if a previous player (or the same player when selecting two variations) had picked a wild cube, which could then be used for = or C.

Penalty -1 for the player making the illegal variation selection

**A15** Situation (**JS** only) A player selects Required Card, but the chosen card is not in the Universe.

Ruling The player must pick another variation.

Penalty -1 for the player making the illegal variation selection

**A16** Situation (**JS** only) Same as **A15**. However, no one notices the illegal procedure, and the next player selects a legal variation and/or the Goal is set.

Ruling If a player selects a variation that cannot affect the shake and no one charges illegal procedure, that variation is ignored. There is no penalty against the player making the illegal selection since the selection was insulated by the next player’s action.

Comment If a Goal is set, and an opponent challenges Impossible, the challenge should be worked out in the usual way. The Goal-setter should write a Solution that ignores the Required Card variation. On the other hand, if the Goal-setter notices that the illegal selection has been insulated by the next player’s legal selection, the Goal-setter might call “no Goal.” However, an opponent should disagree with the declaration and set a Goal since the illegal variation is ignored.

- A17** Situation (JS only) A player selects Multiple Operations or one of the two interchangeable variations.  
 Ruling Since these variations are in effect at all times in Junior and Senior, this selection is illegal.  
 Penalty -1 for the player making the illegal variation selection  
 Comment The automatic variations are not listed on the variation selection sheet where players circle. Therefore, if they are using the proper selection sheet, this situation should not occur.
- A18** Situation (JS only) A player selects Blank Card Wild. However, the blank card is not in the Universe. The player selecting the variation claims that this selection means the blank card must now be added to the Universe.  
 Ruling The variation selection is illegal. Blank Card Wild may be chosen only if the blank card is in the Universe.  
 Penalty -1 for the player making the illegal variation selection
- A19** Situation (JS only) A player selects Blank Card Wild. Then another player selects "BR Required" even though that card is not in the Universe. The second player argues that the selection is legal and forces all players to put BR on the blank card.  
 Ruling The second variation selection is illegal, and that player must pick another variation. The Required Card variation requires that the card itself be in the solution set; the blank card may not be substituted for the required card.  
 Penalty -1 for the player making the illegal variation selection
- A20** Situation (JS only) A player selects Blank Card Wild. Then another player selects Blank Card Forbidden (or vice-versa).  
 Ruling The second variation selection is illegal, and that player must pick another variation.  
 Penalty -1 for the player making the illegal variation selection
- A21** Situation (JS only) A player chooses a Double Set that contains no cards.  
 Ruling The variation selection is illegal. The player must select another variation or select Double Set with a non-empty set that doesn't equal  $\underline{V}$ .  
 Penalty -1 for the player making the illegal variation selection
- A22** Situation (JS only) A player selects a Double Set that equals the Universe.  
 Ruling The variation selection is illegal. The player must select another variation or select Double Set with a different set.  
 Penalty -1 for the player making the illegal variation selection
- A23** Situation (JS only) A player selects  $R' \underline{U} (G - Y)$  as the Double Set.  
 Ruling The variation selection is illegal because the Set-Name contains more than four symbols (not counting the parentheses). The player must select another variation or select a different non-empty Double Set that doesn't equal  $\underline{V}$ .  
 Penalty -1 for the player making the illegal variation selection
- A24** Situation (JS only) A player selects Required (or Forbidden) Card. However, the chosen card is not in the Universe.  
 Ruling The variation selection is illegal. The player must select another variation or select Required (or Forbidden) Card with a card that is in the Universe.  
 Penalty -1 for the player making the illegal variation selection.

**A25** Situation (JS only) A player selects BR as the Required Card. Another player then selects BR as the Forbidden Card (or vice-versa).  
Ruling The second variation selection is illegal. The player must select another variation or select a different Forbidden Card.  
Penalty -1 for the player making the illegal variation selection.

## Section OS-B: Setting the Goal

*NOTE* Many situations in section **B-I** of the Equations manual also apply to On-Sets.

- B1** Situation The Goal-setter uses only one or two digit cubes in the Goal but does not move the remaining digit cube(s) to Forbidden.  
Ruling It is customary to place any unused digit cubes in Forbidden. However, the Goal-setter incurs no penalty for not doing so. If an opponent insists that the extra digit cube(s) be moved to Forbidden, the Goal-setter should do so.  
Comment If no challenge block is available, players may agree to use a digit cube not in the Goal as the challenge block.
- B2** Situation The Goal-setter sets an illegal Goal (e.g., an illegal configuration such as a backwards L). Instead of challenging Impossible, an opponent calls illegal procedure.  
Ruling The Goal is an illegal procedure. Since illegal procedure was charged before anyone challenged, the Goal-setter must revise the Goal to make it legal. All digit cubes played to the mat must stay. If fewer than three digits were used, one or more digits may be added to the Goal.  
Penalty -1 if the Goal-setter does not correct the Goal within the time limit
- B3** Situation Same as **B2** except that no opponent challenges or charges illegal procedure, and one or more cubes are played to Required, Permitted, or Forbidden.  
Ruling An Impossible challenge should be made against the latest Mover.  
Comment A judge should not tell the players that an Impossible challenge is in order unless the challenge has been made and the Third Party has taken a side.
- B4** Situation The Goal-setter sets a Goal that equals a negative number. An opponent charges illegal procedure.  
Ruling Assuming the Goal fits one of the acceptable configurations, it is not illegal procedure. Set aside the illegal procedure charge. The shake continues.  
Comment The official should not tell players that an Impossible challenge should be made against the Goal. However, if an Impossible challenge is made and players are arguing about the correctness of the challenge, the official may rule that no Solution is possible for a negative Goal. But do so only *after* the Third Party has taken a side.
- B5** Situation The Goal-setter sets the Goal before the dealer finishes dealing the cards.  
Ruling Setting the Goal is illegal procedure since it not only preceded the completion of the Universe but also the selection of variations. Remove the Goal from the mat until the Universe is complete and variations are chosen. The Goal-setter may then set the same or a different Goal.  
Comment Watch out for collusion between two players against the third player in this situation.

- B6** Situation (MJS only) The Goal-setter calls “Bonus,” plays an = or C cube to Forbidden, then places one or more digit cubes on the Goal line. An opponent charges illegal procedure.
- Ruling The bonus move is illegal procedure and must be returned to Resources. The Goal-setter may not make another bonus move to replace the illegal one because he has started setting the Goal. Any cubes placed in the Goal must remain there.

## Section OS-C: Moving

*NOTE* Many situations in section C of the Equations manual also apply to On-Sets.

- C1** Situation A player moves an extra digit cube to Required, Permitted, or Forbidden.  
Ruling Since digits are not used in Solutions, this move does not count as the player's turn. The cube (and the remaining digit cube if it is still in Resources) should be placed in Forbidden. Any challenge against the digit cube move is set aside. It is still the turn of the same player.  
Penalty None against any player who challenged the move of the digit cube
- C2** Variation Required –  
Situation A player moves the last – cube in Resources to Forbidden. No – is in Required or Permitted. An opponent charges illegal procedure.  
Ruling The move is not illegal procedure. The cube stays in Forbidden where it was played.  
Comment An opponent should challenge Impossible. However, the official should not tell players this.
- C3** Variation Shift from Permitted  
Situation A player calls "Bonus," shifts a cube in Permitted to either Required or Permitted, then makes a regular move. An opponent charges illegal procedure.  
Ruling The move is illegal procedure. A Bonus move is from Resources to Forbidden. The second cube must be returned to Resources and may not be replaced with another regular move on this turn.  
Penalty -1 if the Mover cannot undo the illegal procedure before his time expires.
- C4** Variation Shift from Permitted  
Situation A player makes a Bonus move to Forbidden, then shifts a cube in Permitted to either Required or Forbidden. An opponent charges illegal procedure.  
Ruling The move is not illegal procedure (assuming the player is not leading the match and the shift is not an = or C to Forbidden).
- C5** Variation Shift from Permitted  
Situation A player moves the last cube in Resources to Permitted. May the next player shift the cube from Permitted to Required?  
Ruling No, he may not. Once the last cube is legitimately played to Required or Permitted, all moves are over, and all players must present a Solution (or challenge Impossible against the last Mover).
- C6** Variation Shift from Permitted  
Situation A player moves the last cube in Resources to Permitted. The player to the left of that player shifts the last cube from Permitted to either Required or Forbidden. An opponent challenges Impossible against the player who illegally shifted the last cube.  
Ruling Shifting the last cube out of Permitted is illegal procedure. The cube must remain where it was played. (See **C5** above.) The challenge is set aside, and players follow the Last Cube procedure.  
Penalty The player challenging the illegal shift loses a point.

- C7** Variation Shift from Permitted is *not* in force.  
 Situation A player moves a cube from Permitted to Required or Forbidden.  
 Ruling The move is illegal procedure. The cube is returned to Permitted and the player must make another move.  
 Penalty -1 if the player does not legally complete the turn before his time limit expires
- C8** Variation Shift from Permitted is *not* in force.  
 Situation A player moves a cube from Permitted to Required or Forbidden. An opponent challenges either Now or Impossible.  
 Ruling The move is illegal procedure. However, the illegal procedure is insulated by the challenge, which is worked out in the usual way. The cube shifted from Permitted stays where it was shifted.
- C9** Variations Shift from Permitted and Required –  
 Situation A – cube is in Permitted and there are no – cubes in Required or Resources. A mover shifts the – in Permitted to Forbidden. An opponent charges illegal procedure.  
 Ruling The move is not illegal procedure. The – cube stays in Forbidden.  
 Comment An opponent should challenge Impossible. However, the official must not tell players this.
- C10** Variation (**EM** only) Two operations (and not multiple operations or wild cube)  
 Situation Only one operation cube is in Required and Permitted. A player moves the last operation cube in Resources to Forbidden. An opponent charges illegal procedure.  
 Ruling The move is not illegal procedure. The cube stays in Forbidden where it was played.  
 Comment An opponent should challenge Impossible. However, the official must not tell players this.
- C11** Variation (**MJS** only) Required = (or C)  
 Situation With more than four cubes in Resources, a player moves the last = (or C) cube in Resources to Forbidden. No = (or C) is in Required or Permitted. An opponent charges illegal procedure.  
 Ruling The move is illegal procedure since = and C cubes may not be played to Forbidden until fewer than five cubes remain in Resources. The = (or C) in Forbidden is returned to Resources and the player must make another move.  
 Penalty -1 if the mover does not legally complete the turn before his time limit expires.  
 Comment An opponent should have challenged Impossible when the required cube was moved to Forbidden. However, the illegal procedure charge was made first, which allowed the mover to return the cube to Resources.
- C12** Variation (**MJS** only) Required = (or C)  
 Situation Same as **C11** except that four or fewer cubes are in Resources.  
 Ruling The move is not illegal procedure since = and C cubes may be played to Forbidden when fewer than five cubes remain in Resources.  
 Penalty None  
 Comment An opponent should challenge Impossible against the last Mover since no Solution that obeys the Required Cube variation is possible.

- C13** Variation (MJS only) Shift from Permitted  
Situation A player shifts an = or C cube from Permitted to Forbidden.  
Ruling The move is illegal procedure (even if fewer than five cubes are in Resources). The cube is returned to Permitted, and the player must make another move.  
Penalty -1 if the player does not legally complete the turn before his time limit expires  
Comment A player may shift an = or C cube from Permitted to Required.
- C14** Variation (MJS only) Shift from Permitted  
Situation Same as **C13** except that four or fewer cubes remain in Resources.  
Ruling The move is still illegal procedure. The cube is returned to Permitted and the player must make another move.  
Penalty -1 if the player does not legally complete the turn before his time limit expires

## Section **OS-E**: Writing and Checking Solutions

*NOTE:* Many situations in section **E** of the Equations manual also apply to On-Sets. Those situations are not repeated here.

- E1** Situation A player writes  $\emptyset$  in a Solution instead of  $\underline{\Delta}$ ,  
 Ruling Since  $\emptyset$  is the standard symbol for the null set in mathematics books, the Solution should not be ruled incorrect just for this reason. However, the player should be told to use  $\underline{\Delta}$  for the empty set in the future.
- E2** Situation A player writes “=5” (or whatever the Goal is) after the Set-Name in the Solution.  
 Ruling The Solution is automatically wrong.
- E3** Situation A player checking the Set-Name  $R \underline{U} B$ ’ wants to insert parentheses to make it  $(R \underline{U} B)$ ’.  
 Ruling This placement of parentheses is illegal since the On-Sets order of operations requires ‘ to be done before  $\underline{U}$ .
- E4** Variations  $\underline{\_}$  Wild,  $\underline{U}$ - Interchangeable  
 Situation A player writes a Solution like this:  $B - R$  Is this acceptable?  

$$\begin{array}{c} \uparrow \\ \underline{U} \end{array}$$
  
 Ruling No, it is not.  $\underline{\_}$  is wild, not  $\underline{U}$ . The Solution is incorrect.
- E5** Variations  $\underline{U}$ - Interchangeable or  $\underline{V}$ - $\underline{\Delta}$  Interchangeable  
 Situation A Solution-writer writes  $\overline{\square}$  or  $\overline{\square}$  to indicate a cube used upside-down.  
 Ruling Although not required to use the dash to indicate the bottom of the symbol, the Solution-writer has done nothing wrong. A problem would occur if there was no  $\underline{U}$  or  $\underline{V}$  cube available (that is,  $\underline{\_}$  or  $\underline{\Delta}$  is actually being used upside-down). However, even in this case, the Solution should be accepted because, in general, the bars over or under the symbols are ignored in Solution.
- E6** Situation (**MJS** only) Only the Set-Name is circled on the Solution-writer’s paper. The Restriction is not inside the circle. (Or only the Restriction is circled and not the Set-Name.)  
 Ruling The Solution should not be ruled incorrect just for this reason. However, to avoid any further confusion, the Solution-writer should be told to circle both the Set-Name and the Restriction before checking begins.
- E7** Situation (**MJS** only) A player presents a Solution consisting of only a Restriction part.  
 Ruling The Solution is automatically incorrect.
- E8** Situation (**MJS** only) A player presents a Solution in which the Set-Name part is written above or to the left of the Restriction part.  
 Ruling There is nothing inherently wrong. There is no required order in which the parts must be written. Opponents will check the Restriction part first regardless of the order in which the two parts of the Solution are listed.
- E9** Situation (**MJS** only) A player presents a Solution like  $B = B, B$ . An opponent claims the Solution does not contain at least two cubes.  
 Ruling Since the Restriction is part of the Solution, this Solution contains three cubes. The opponent’s objection is rejected.

- E10** Variation (MJS only) B required  
 Situation A Solution-writer uses a B cube only in the Restriction part.  
 Ruling If there is a B cube in Required, the Solution is incorrect since any color or operation cube in Required must be used in the Set-Name. However, if the B cube is in Permitted or Resources, the Solution-writer's use of the B cube satisfies the variation since it states only that the *Solution* must contain a B cube. A Solution consists of the Set-Name and, if one is made, a Restriction.
- E11** Variation (MJS only) = (or C) Required  
 Situation A Solution-writer presents a Solution consisting only of a Set-Name.  
 Ruling The Solution is incorrect. Once = (or C) required is chosen, all Solutions must include a Restriction part whether = (or C) is played to Required or not.
- E12** Variation (MJS only) No null Restrictions  
 Situation A Solution-writer presents a Solution containing two Restrictions and tries to specify which one must be worked out first.  
 Ruling Each Restriction must remove at least one card regardless of which one is applied to the Universe first. The writer may not specify an order.
- E13** Variation (MJS only) No null Restrictions  
 Situation No = or C cube is in Required. A player presents a Solution consisting of only a Set-Name. An opponent argues that the Solution does not obey the no null Restrictions variation.  
 Ruling The opponent is incorrect. No null Restrictions does not require that a Restriction be made. It says that *if* any Restriction is made, it must remove at least one card from the Universe.
- E14** Variation (MJS only) Y Wild  
 Situation A Solution-writer indicates that Y stands for G in the Restriction. However, he does not show explicitly that Y also stands for G in the Set-Name.  
 Ruling The Solution is not automatically incorrect. Since the wild cube must stand for the same symbol everywhere in a Solution, the presumption is that Y stands for G throughout the Solution. So the Solution-writer may indicate the use of the Y in writing in *either* the Set-Name or the Restriction.
- E15** Variation (MJS only) Two operations  
 Situation A Solution-writer uses two operations in a Restriction but not in the Set-Name or one operation in the Restriction and another in the Set-Name.  
 Ruling The Solution is incorrect. The variation requires two operations in the Set-Name.
- E16** Variation (JS only) Blank Card Wild  
 Situation A Solution-writer does not specify which color(s) are on the blank card.  
 Ruling The Solution is not automatically incorrect. However, in checking the Solution, opponents should assume that *no* colors are on the blank card. Any attempt by the writer to state orally which colors are on the blank card should be ignored.

- E16** Variation (JS only) Blank Card Wild  
 Situation A Solution is written near the bottom of the paper. At or near the top, the player copied the Universe and on the blank card of that Universe indicated which colors are on the blank card. An opponent objects, saying that the colors on the blank card must be indicated with or near the Solution.  
 Ruling The Solution should not be ruled incorrect simply for this reason. The variation says that the Solution-writer must indicate in writing which colors are on the blank card. The writer has done that.  
 Comment If necessary, the judge may ask the writer to specify which blank card designation on his paper counts or whether the writer wants the blank card to be blank.
- E17** Variations (JS only) Blank card required and Blank Card Wild  
 Situation A player presents a Solution in which the Set-Name contains the blank card with one or more color dots on it.  
 Ruling This does not in itself make the Solution incorrect. Blank card required means that the blank card must be in the Set-Name. Then Blank Card Wild allows the Solution-writer to put one or more colors on it.
- E18** Variations (S only) Two Solutions  
 Situation After a Now challenge, a player presents two Solutions. One uses, say, a B cube from Resources and the other uses a R cube from Resources.  
 Ruling There is nothing inherently wrong with this. The Solutions are checked separately. As long as each one uses no more than one cube from Resources, they obey the rules for a Now challenge.
- E19** Variations (S only) Two Solutions  
 Situation After an Impossible challenge, a player presents two Solutions. One uses a certain combination of cubes from Resources while the other uses a different combination of Resource cubes.  
 Ruling There is nothing inherently wrong with this. The Solutions are checked as if they were presented by different players. There is no requirement that both Solutions use the same Resource cubes (or same Permitted cubes).
- E20** Variations (S only) Two Solutions  
 Situation The Goal is 0. A player challenges Impossible.  
 Ruling The Challenger is correct. There is no way to present two Solutions for a Goal of 0 and have one solution set contain at least one card that is not in the other solution set.  
 Comment The official should not state this ruling until the Third Party has taken a side.
- E21** Variations (S only) Two Solutions  
 Situation The Goal equals the number of cards in the Universe. A player challenges Impossible.  
 Ruling The Challenger is correct. There is no way to present two Solutions for this Goal and have one solution set contain at least one card that is not in the other solution set.  
 Comment The official should not state this ruling until the Third Party has taken a side.

- E22** Variations (**S** only) Two Solutions, double set  
 Situation The Goal is larger than the number of cards in the Universe. However, to equal the Goal, all cards in the Universe must be in the solution set. A player challenges Impossible.  
 Ruling Same as **E21**  
 Comment Same as **E21**
- E23** Variations (**S** only) Two Solutions, Wild cube  
 Situation A player presents a pair of Solutions. In one Solution, the wild cube stands for U. In the other Solution, the wild cube stands for –.  
 Ruling There is nothing inherently wrong with this. The Solutions are judged separately. As long as *within* each Solution, the wild cube stands for the same symbol everywhere, the Solution-writer has satisfied the wild cube variation.
- E24** Variations (**S** only) Two Solutions, Blank Card Wild  
 Situation A player presents a pair of Solutions. The two solution sets contain the same cards except that for one Solution the blank card contains B and R dots and for the other the blank card contains G and Y dots (or no dots).  
 Ruling The Solution-writer is incorrect. Both Solutions yield the same set of physical cards from the Universe and therefore do not satisfy the requirement of the two Solutions variation.
- E25** Variations (**S** only) Two Solutions, Blank Card Wild  
 Situation The Goal is 1. A player presents two Solutions. The solution set in each case consists of the blank card but with different sets of dots.  
 Ruling Same as **E24**
- E26** Variations (**S** only) Two Solutions, Required Card  
 Situation The Goal is set as 1. A player challenges Impossible.  
 Ruling The Challenger is correct. There is no way to present two Solutions for this Goal and satisfy both the Two Solutions and Required Card variations.  
 Comment The official should not state this ruling until the Third Party has taken a side.
- E27** Variations (**S** only) Two Solutions, Required Card, Double Set  
 Situation The Required Card is part of the Double Set. The Goal is set as 2. A player challenges Impossible.  
 Ruling The Challenger is correct. There is no way to present two Solutions for this Goal and satisfy all the variations.  
 Comment The official should not state this ruling until the Third Party has taken a side.
- E28** Variations (**S** only) Two Solutions, Absolute Value  
 Situation The Goal contains at least one upside-down cube. A player presents two Solutions. One of them equals the Goal with the upside-down cube representing a negative number while the other Solution equals the Goal using the absolute value of the upside-down digit.  
 Ruling There is nothing inherently wrong with this. Since the Solutions are separate, each one may equal a different value of the Goal.