

Colorado Secretary of State

# SIGNATURE VERIFICATION GUIDE



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Version 2.1

September 13, 2018

# OVERVIEW

Thank you for taking the time to serve as a signature verification judge. “Signature verification” is the process of reviewing the signature on the back of a voter’s ballot-return envelope with that voter’s signature saved in the SCORE database. Signature verification plays an important role in our elections because it ensures that only those individuals eligible to vote have their vote counted. It also allows Colorado voters the convenience of voting by mail.

This guide will help you determine whether the mail ballot-return envelope’s signature and the voter’s signature in SCORE were authored by the same person.<sup>1</sup> There are two exercises at the end to help you begin thinking about verification methods.

If you have any questions, please contact

Thank you.

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<sup>1</sup> This Guide’s principles are largely derived from: ALBERT OSBORN, QUESTIONED DOCUMENTS (Boyd Printing Company 1946) (1910)

# ANALYSIS

When conducting signature verification, you should keep in mind that everyone writes differently and no one signs his or her name exactly the same way twice. The following two-step analysis will allow you to confidently decide whether signatures are consistent with each other:

## **Step One: Evaluate the signature's broad characteristics.**

Broad characteristics include:

- The type of writing (for example, cursive v. print)
- The speed of writing (for example, harmonious v. slow and deliberate)
- Overall spacing
- Overall size and proportions
- Position of the signature (for example, slanted v. straight)
- Spelling and punctuation

If the broad characteristics of the signature on the ballot-return envelope are clearly consistent with the broad characteristics of the voter's signature in SCORE, you may accept the signature and move on. If not, move to step two.

## **Step two: Evaluate the signature's local characteristics.**

If you find a combination of dissimilarities between the two signatures' broad characteristics, then evaluate local characteristics, which include:

- Internal spacing
- The size or proportions of a letter or letter combination
- Curves, loops, and cross-points
- The presence or absence of pen lifts
- Beginning and ending strokes

After evaluating the signatures' local characteristics, you must decide whether to accept the ballot-envelope signature as genuine, reject it, or conduct additional research. Only a combination of characteristic differences between signatures should trigger a rejection or additional research because no one signs his or her name the same way twice.

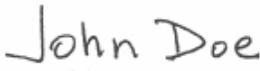
If, after going through the above analysis, you find a combination of differences between the signature on the ballot-return envelope and the signature in SCORE, ask whether the differences can be reasonably explained. If you can reasonably explain the differences, then you may accept the signature. However, you should not waste time trying to "explain away" the differences that you see. If you find yourself laboring to do so, you should reject the signature or conduct further research.

Looking at more than one SCORE signature, if available, may help with your analysis because people develop certain signature habits over time. Identify these habitual marks and determine whether they exist in the ballot-return envelope's signature.

# BROAD CHARACTERISTICS

## The Type of Writing

Next to spelling, the type of writing is the easiest characteristic to notice a difference in. Does the voter's record have only cursive handwriting but the ballot-return envelope has print? This is an immediate indicator for rejection of a signature or further research.

| Genuine Signature   | Questioned Signature  |
|---|---|
|  |  |

## The Speed of Writing

Someone who is writing his or her own signature will perform the act fairly quickly. This is because the person has likely signed his or her name thousands of times, so the gesture is automatic and harmonious, requiring little thought or concentration.

If someone other than the voter took a long time to copy the voter's signature, the copied signature will not have a free and natural look to it. Instead, you should see slower, deliberate marks. If the forger attempted to create the signature quickly, then it should have various characteristic differences.

Keep in mind, though, that this situation may go in reverse. If the voter naturally has shaky or poor handwriting that is evident in the SCORE signature, but the ballot-return envelope's signature is suddenly of high quality, that could indicate a forgery.

Look to see whether the ballot-return envelope's signature was made at the same speed as the signatures in SCORE. Please keep in mind that a reasonable explanation for a shaky signature is the voter's advanced age, decreased muscle strength, or the surface below the envelope.

| Genuine Signature   | Questioned Signature  |
|---|---|
|  |   |
|  |  |

## Overall Spacing

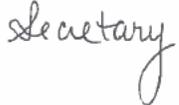
Writing a signature is a fixed and subconscious habit, so the signature's spacing should be reasonably similar. Determine whether the ballot-envelope's signature has odd or unnatural spacing that cannot be reasonably explained.

| Genuine Signature   | Questioned Signature   |
|---|--|
|  |  |
|  |  |

## Overall Size and Proportions

The signature's size and proportions should also be reasonably similar. At your first impression, identify whether the ballot-return envelope's signature is too large or small compared to the signatures in SCORE. You may find it difficult to perform this comparison by looking only at one SCORE signature and may need to conduct further research.

The first example below has odd proportions because the letter's height compared to the name's length is very different than the genuine signature. The remaining two examples have unreasonably different sizes.

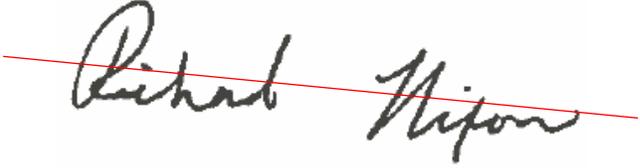
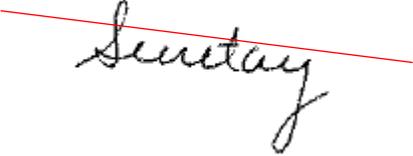
| Genuine Signature   | Questioned Signature  |
|---|---|
|  |   |
|  |  |
|  |   |

## Slant of Writing

A signature's slant may also show evidence of a forgery. The first slant to be aware of is the signature's position related to the signature line. People tend to hold the pen and paper the same way, which causes their writing to slant in the same direction each time they write.

You may also find that individual letters in the signature slant in the opposite direction. This type of deviation will usually accompany a difference in the signature's overall spacing. See the third example below.

Look to see whether the entire signature slants or leans in a different direction than the signatures in SCORE. A writer's slant is one of the most consistent parts of his or her signature.

| Genuine Signature   | Questioned Signature  |
|---|---|
|    |     |
|    |     |
|  |  |

## Spelling

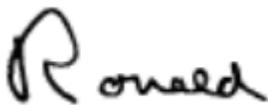
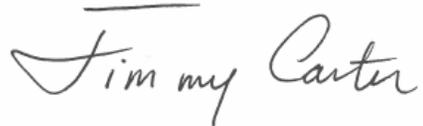
This one is simple—if the name is misspelled, you should reject the signature. But an elector is permitted to use a common nickname or initials (for instance, a voter may sign as “Bobby” instead of “Robert”).

| Genuine Signature   | Questioned Signature   |
|---|--|
|  |  |

# LOCAL CHARACTERISTICS

## Internal Spacing

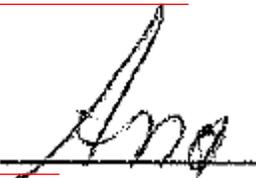
As mentioned before, the spacing and the relationship between successive letters should be reasonably similar. In the examples below, you will notice that the “R” in Ronald is much closer in the questioned signature than in the genuine one, and the questioned “Jimmy” has a great deal of space in between certain letters.

| Genuine Signature   | Questioned Signature  |
|---|---|
|  |  |
|  |   |

## Size or Proportions of a Letter or Letter Combination

Letter sizes and proportions should be reasonably similar. Review whether letters are the same size and whether letter height, when compared to the name’s length, leads to suspicious proportions.

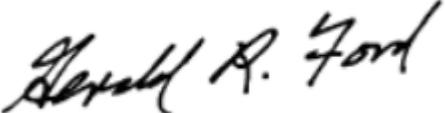
Below, the first questioned signature has unreasonable proportion in “Madison.” The remaining two signatures have noticeably different sizes in certain letters.

| Genuine Signature   | Questioned Signature  |
|---|---|
|  |   |
|  |  |
|  |   |

## Curves, Loops, and Cross-points

Like size, these characteristics may be difficult to identify if you are comparing the ballot-return envelope's signature to only one SCORE signature. Some writers tend to have very loopy signatures while others have sharp, angular writing. Characteristics like loops and curves tend to be consistent across a person's handwriting, but cross-points can be reasonably impacted by simple factors like the type of pen the person used.

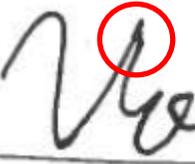
Find whether there are any noticeably different marks like in the examples below.

| Genuine Signature   | Questioned Signature  |
|---|---|
|  |  |
|  |   |

## The Presence or Absence of Pen Lifts

If someone attempted to copy a signature while looking at an example, they may have written in pieces or chunks while referring to the example several times. Generally, when this occurs the forger will leave connection or hesitation marks that will not appear in the SCORE signatures. The forger may have also left the pen motionless on the page as he or she copies the signature.

Look to see whether there are any strange connection points or hesitation marks like in the examples below.

| Genuine Signature   | Questioned Signature  |
|---|---|
|  |  |
|  |   |

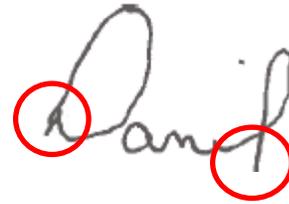
## Beginning and Ending Strokes

A genuine signature becomes automatic over time. This automatic nature leads to what appear to be “flying starts and finishes,” where the signature’s start and end points seem to vanish off the paper. Genuine writers tend to begin writing their signature before the pen even hits the page. A forger will generally start and finish with the pen on the paper, leaving larger ink dots or marks.

Genuine Signature



Questioned Signature



# ELECTRONIC SIGNATURES IN SCORE

When reviewing signatures in SCORE it is very likely that you will encounter signatures that were created and captured electronically. This is because Colorado Driver's License offices now use an electronic signature pad to record signatures, including for voter registration. These electronic signatures create some unique circumstances that you should consider when comparing a ballot's signature.

When comparing an electronic signature to a handwritten signature, you should continue to consider the factors listed on the previous pages. This means you should begin your analysis by looking at each signature's broad characteristics and if those characteristics are not clearly consistent you should continue your analysis by looking at the local characteristics found in both. Bear in mind that the local characteristics of an electronic signature may be difficult to determine. Because the technology for electronic signatures is not as precise as pen and paper it may be difficult, for example, to spot the presence or absence of pen lifts or beginning and ending strokes. Regardless, you should still consider all the factors in the previous pages when comparing these signatures and make a decision based on the totality of what you find.

If, after going through your analysis, you find a combination of differences between the signature on the ballot-return envelope and the signature in SCORE, ask whether the differences can be reasonably explained. You should consider that electronic signatures in particular may not be as precise as their handwritten counterparts and may even appear "blurry" or "messy" in comparison. It is possible that this may reasonably explain the difference between a handwritten and an electronic signature. But you should not waste time trying to "explain away" the differences that you see. If you find yourself laboring to do so, you should still reject the signature or conduct further research.

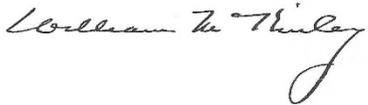
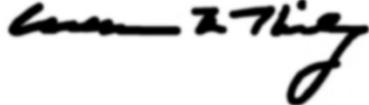
Remember- you may always look through the voter's entire signature history to determine if the current ballot envelope signature matches that on file. If you find that the electronic signature found in the voter's history is difficult to read or match it is possible they may have other signatures on file that may be easier to read and distinguish. Before rejecting a voter's signature on his or her ballot, conduct research on these other signatures to determine if the inconsistency is with the ballot's signature or with the electronic signature in SCORE.

## “Messy” electronic signatures

Because the technology for capturing electronic signatures is not always as precise as a pen and paper signature, an electronic signature may appear “messy” in comparison. However, even a “messy” signature should be compared using the two-step process described above.

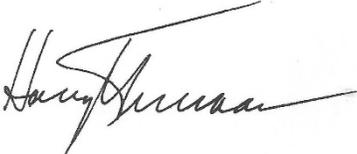
In the first example, the electronic signature found in SCORE looks vague and imprecise compared to the handwritten signature found on the ballot. However, the broad characteristics appear to be substantially similar. The type, speed, spacing, size, and position of each signature appear to be the same and any minor disparities can be explained by the fact that one signature was created using an electronic pad and the other was created using pen and paper.

In the second example, many of the broad characteristics are again substantially similar, although the electronic signature is not as precise as the handwritten signature. Regardless, these signatures can still be considered a match because the broad characteristics are substantially similar. If you decide an electronic signature is too “messy” compared to a handwritten signature to fairly compare, you should always look through the voter’s signature history to determine if there is a clearer signature on file before rejecting the ballot signature.

| Handwritten Signature   | Electronic Signature   |
|---|--|
|   |   |
|  |  |

## Electronic signatures that have been cut-off

In some instances, individuals signing electronic signature pads may have some of their signature cut-off. This is likely because the voter's pen stroke went outside the area that the electronic signature pad could capture. You should still compare the full electronic signature to the handwritten signature using the two-step process outlined in this Guide. If you cannot verify the signatures using the two-step process, remember there may be more signatures in the voter's file that you can use to compare.

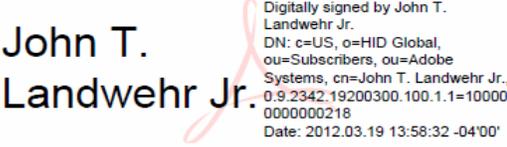
| Handwritten Signature   | Electronic Signature   |
|---|--|
|  |  |
|  |  |

# ELECTRONIC SIGNATURES FOR UOCAVA BALLOT AFFIDAVITS

There are some instances in which a voter may return a ballot containing an electronic or digital signature. This most often happens when a voter returns his or her ballot electronically. Normally, voters returning their ballots this way are required to print their ballot affidavit, sign the affidavit, and then scan and send or fax the signed paper. However, some voters have begun attaching a signature to the affidavit electronically. An electronic signature on a returned ballot should not be disqualified solely because it is electronic. You should continue to review the signature as you would any other, completing the two-step process of comparison if necessary.

## Electronic signatures using typed font

Some voters have attempted to use a typed font as their electronic signature- the first signature below is an example of this. This typed font may also include an IP address “stamp” as in the second example below. While these signatures are becoming more common in commercial contracts, a signature using either of these methods should be rejected when accompanying a ballot. If the ballot affirmation or affidavit signature looks entirely different from the signature found in SCORE, then you should consider it a discrepant signature.

| Electronic Signature #1 | Electronic Signature #2   |
|-------------------------|---|
| George Washington       |  <p>Digitally signed by John T. Landwehr Jr.<br/>DN: c=US, o=HID Global, ou=Subscribers, ou=Adobe Systems, cn=John T. Landwehr Jr., 0.9.2342.19200300.100.1.1=100000000000218<br/>Date: 2012.03.19 13:58:32 -04'00'</p> |

## Electronic signatures that appear to be cut and paste

It is now possible for voters to cut and paste a handwritten signature that has been scanned electronically onto a voter affidavit that they then return electronically. These signatures may have the same issues as any other electronic signature; they may appear “blurry”, may not be as precise as a handwritten signature, or may be cut-off. Regardless, these signatures should be compared to the voter’s signature found in SCORE as you would any other signature. If you cannot verify the voter using the two-step process then the signature should be rejected.

# BALLOTS THAT ARE WITNESSED

All Colorado ballots contain a line for the voter to sign on and a line for a witness to sign on. However, a voter is only required to have a witness sign the ballot if the voter made a mark instead of signing. Despite this, many voters have witnesses sign their ballot, unaware that this is not required. On the following pages are some examples of the situations you might face with witnessed ballots.

## Ballots with a mark and a witness signature

The only ballots that must be witnessed are those on which the voter has made a mark instead of signing. A mark is a cross or other sign made in lieu of a signature. A mark is most commonly represented with a cross as in the example below. If a ballot contains a mark and a witness signature, it should be accepted. No signature verification is required for the witness signature or the mark.

Mark Example



## Ballots with a signature and a witness signature

Ballots that contain both a voter signature and a witness signature should be signature verified. Unlike a ballot with a mark and a witness signature, a ballot with a voter's signature is not automatically accepted solely because the ballot also contains a witness signature. You should follow the normal two-step process outlined in this manual to determine if the voter's signature matches the signature found in SCORE.

Normal Signature with Witness Example

X Henry Thomas  
Voter's Signature - (Required)      Date

If the voter is unable to sign, he or she must make a mark and have the mark witnessed by another person.

Franklin Roosevelt  
Witness's Legal Name

## Ballots with an unclear pen stroke and a witness signature

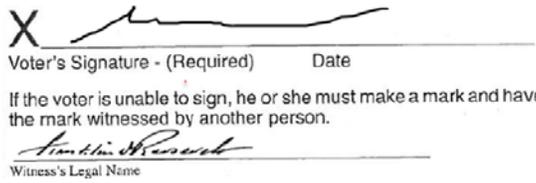
It may sometimes be difficult to determine if a pen stroke on a voter signature line is a “mark” or a signature. If the ballot does not contain a witness signature, then this pen stroke must be put through normal signature verification.

However, if a ballot does contain a witness signature then you must first determine whether the pen stroke on the voter signature line is a “mark” or a signature. If you determine that the pen stroke is a “mark”, then the ballot should be accepted without the need to verify any signature. If you determine that the pen stroke is a signature then you should put the signature through normal signature verification. Remember, a mark is a cross or other sign made in lieu of a signature. If a pen stroke on a ballot appears to be an attempt at a signature then the pen stroke should be treated as a signature and be sent through the verification process.

The example below appears to be a pen stroke that is meant as a signature. This should therefore be signature verified, regardless of the witness signature. Remember, it is always possible that a voter’s signature has deteriorated over years. It is useful to look through the voter’s signature history when reviewing the pen stroke to see if the stroke is consistent with a pattern of signature deterioration from the voter.

### Unclear Pen Stroke with Witness Example

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Voter's Signature - (Required)      Date

If the voter is unable to sign, he or she must make a mark and have the mark witnessed by another person.

\_\_\_\_\_  
Witness's Legal Name

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## Ballots with no voter marking and a witness signature

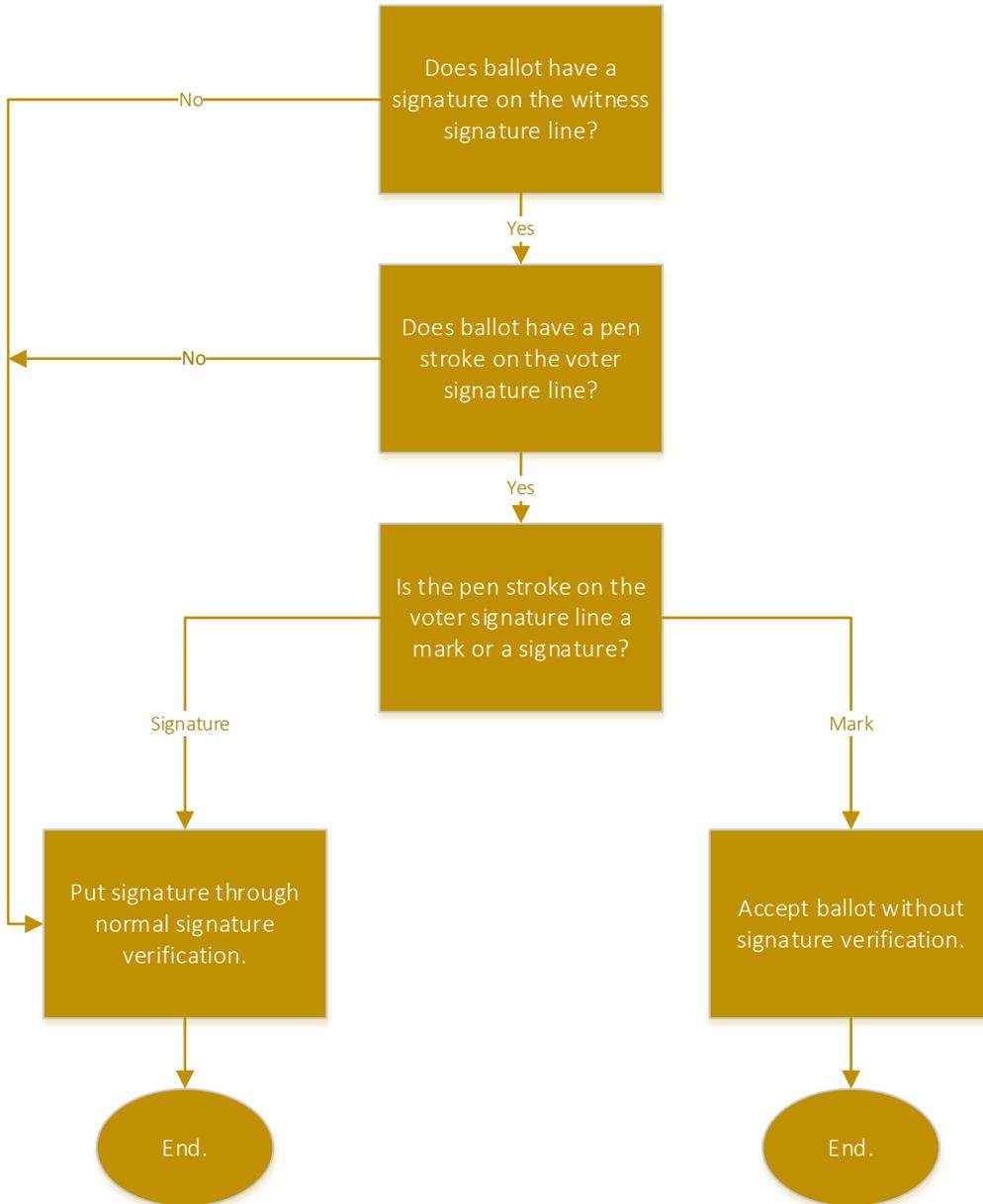
Some ballots may be returned without a signature for the voter but containing a signature for the witness. In this circumstance, you should consider the signature on the witness line to be the signature for the ballot. Verify that signature with the voter’s signature found in SCORE as you would any other.

## Stamped signatures

Colorado law allows those who are unable to sign a ballot to both make a mark and have a witness sign their ballot or use a stamped signature as their official signature. A stamped signature should be treated as any other signature; it should be put through signature verification using the two-step process. Remember to use the voter’s signature history in SCORE to review signatures if the first signature on file is difficult to compare.

## Flowchart for witnessed ballots

Use the following flowchart to help you determine what to do with a ballot that has been witnessed.



# SIGNATURES FROM VOTERS IN GROUP RESIDENTIAL FACILITIES

Close attention should be paid to pen strokes found on return envelopes from voters living in group residential facilities. The signatures of these voters are at a higher risk of deteriorating over time, and may look less and less like the comparison signature found in SCORE. With this risk in mind, the following precautions should be taken when reviewing signatures from these voters.

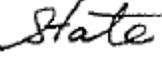
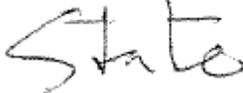
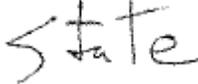
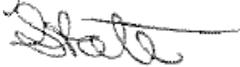
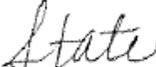
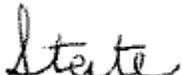
1. **Look for a pattern of deterioration in the voter's signature history.** You may do this for any signature that you review, but for those signatures from voters in group residential facilities, taking this extra step can be even more beneficial. If the signatures you review in SCORE reveal a pattern of deterioration, then this fact may reasonably explain the difference between the ballot's signature and the signature found in SCORE.
2. **Make sure the signature you are reviewing is actually a signature and not a mark.** Because these voters' signatures may deteriorate over time, it may be that the voter has chosen to make a mark instead of signing their ballot. Remember, if you determine that the voter made a mark and that the mark has been witnessed, you should accept the signature as valid.
3. **Be mindful of the voter's situation when reviewing signatures from group residential facility voters.** Remember that if, after going through normal signature analysis, the differences between two signatures can be reasonably explained, you should accept a voter's signature as valid.



# EXERCISE 2: MATCHING SHEET

The 30 words below have 15 authors. Find each of the two handwritings that were authored by the same person. This exercise will make you look at local characteristics in order to find a match.

The answers are on the reverse side of this page.

|    |   |    |   |    |  |    |   |
|----|---|----|---|----|--|----|---|
| 1  |    | 2  |    | 3  |    | 4  |    |
| 5  |    | 6  |    | 7  |    | 8  |    |
| 9  |    | 10 |    | 11 |    | 12 |    |
| 13 |  | 14 |  | 15 |  | 16 |  |
| 17 |  | 18 |  | 19 |  | 20 |  |
| 21 |  | 22 |  | 23 |  | 24 |  |
| 25 |  | 26 |  | 27 |  | 28 |  |
| 29 |  | 30 |  |    |  |    |   |

## Answers:

1-8

2-17

3-9

4-6

5-23

6-4

7-15

8-1

9-3

10-21

11-26

12-22

13-19

14-25

15-7

17-2

18-27

19-13

20-30

21-10

22-12

23-5

24-29

25-14

26-11

27-18

28-16

29-24

30-20