

Reaction-time table: supplied-data analysis

Your goal: Paper data analysis only. Do not run a ruler-drop, digital reaction-time, reflex, drug or other human/animal test. Actual testing requires the teacher's approved protocol, participation process and supervision. Today's objective: Measure reaction time under different conditions and record the data.

One product: Reaction-time data table with baseline and distraction conditions, all trials with units, condition averages computed, and any outliers flagged with notes.

Question: What does a timing comparison show when all raw trials and unknowns stay visible?

Start the work

Judge impairment and responsibility with evidence; a medicine's legal status alone settles neither.

1. Paper data analysis only. Do not run a ruler-drop, digital reaction-time, reflex, drug or other human/animal test. Actual testing requires the teacher's approved protocol, participation process and supervision. Original route: read H1 and RT1; no physical setup or practice trial. Actual route: use only the approved protocol when authorized. Step: Set up the ruler-drop or digital reaction-time test and practice once.
2. Paper data analysis only. Do not run a ruler-drop, digital reaction-time, reflex, drug or other human/animal test. Actual testing requires the teacher's approved protocol, participation process and supervision. Original route: enter the five supplied baseline rows, not newly measured trials. Actual route: use the genuine approved dataset. Step: Run baseline trials and record each reaction time in a data table.
3. Paper data analysis only. Do not run a ruler-drop, digital reaction-time, reflex, drug or other human/animal test. Actual testing requires the teacher's approved protocol, participation process and supervision. Original route: enter the five supplied distraction-labeled rows; do not perform a secondary task. Actual route: use the genuine approved dataset. Step: Repeat trials with a distraction condition (such as a second task).
4. Original route: use R1/C1, retain all rows and report a descriptive difference without a causal claim. Actual route: use genuine inclusion rules and rubric. Step: Average each condition and note which was slower.
5. Save one chosen-route table or submit through the confirmed section. Check that Schoology shows Submitted after uploading, and check the assigned official task separately. Step: Submit your reaction-time data table with both conditions and averages.

Paper data analysis only. Do not run a ruler-drop, digital reaction-time, reflex, drug or other human/animal test. Actual testing requires the teacher's approved protocol, participation process and supervision. If access is blocked, save the labeled table and tell the teacher what you need. After uploading, check that Schoology shows Submitted.

Words you will use

reaction time

Elapsed time from a defined stimulus onset to a defined response event.

stimulus

An event such as a visual cue that can elicit a response.

onset

The instant an event starts.

response event

The defined endpoint used by a timing record, here a button-press event.

duration

The elapsed time between two events.

millisecond (ms)

One-thousandth of a second; a unit of time.

centimeter (cm)

One-hundredth of a meter; a unit of length, not time.

baseline

The reference condition used for comparison.

distraction condition

The supplied label for a condition with a concurrent task; it does not prove an effect.

concurrent

Happening at the same time.

trial

One supplied record within a condition.

repeated trials

Multiple records from the same subject, not independent people.

simulated

Invented for practice rather than actually measured.

raw value

The original supplied number before summaries or changes.

review flag

A marker requesting attention under a stated rule; not proof of error.

outlier

A value that appears unusual relative to others; not automatically an error.

threshold

The value used in a stated decision rule.

strictly greater than

Above the stated value; equality does not count.

inclusion rule

The declared rule deciding which numeric values enter a calculation.

exclusion

Omission from a calculation for a documented reason, while preserving the raw record.

n

The count of included numeric values for that summary.

sum

The result of adding values.

mean

The sum of included values divided by their count.

average

Here, the arithmetic mean.

rounding

Reporting a result to a stated decimal place.

precision of reporting

The detail shown in written numbers; it does not establish measurement quality.

device resolution

The smallest change a measuring system can distinguish or display under its specification.

accuracy

Closeness of a measured value to the value being measured; not proven by an invented number.

qualitative observation

A descriptive account rather than a numeric measurement.

UNAVAILABLE

No observation account was supplied; not evidence that nothing happened.

causation

A claim that one factor produced a change.

cortical delay

A delay attributed specifically to processing in the cerebral cortex, the brain's outer gray layer.

calibration

Checking a measurement system against a reference under stated conditions.

protocol

The genuine approved instructions and rules for an activity.

nerve speed

Signal conduction speed along a nerve; this record supplies no distance or direct nerve measurement.

impairment

Reduced ability to perform a function; not established by these invented values.

Submission check

After uploading, check that Schoology shows Submitted; ask for help if it does not.

H1: Units before conclusions

Paper data analysis only. Do not run a ruler-drop, digital reaction-time, reflex, drug or other human/animal test. Actual testing requires the teacher's approved protocol, participation process and supervision.

Opening input: Record X says 180 ms; record Y says 14 cm. Milliseconds measure time. Centimeters measure distance. Original route: identify which record already reports a duration and explain why the other needs a verified conversion before being called time. No conversion is assigned. Actual route: check the genuine assigned units instead, or mark the source missing. Answer once using H1 only.

Wednesday March 17 follows the March 16 evidence-and-responsibility lesson. No earlier work or actual reaction-time collection is assumed complete. Start S1's brief checks and next actions now; update only changes at the end.

RT1: Complete invented record

RT1 is an author-invented record for one fictional subject F1. F1 is a code, not an actual person. Each condition has five repeated trials. Ten rows are ten trials from one fictional subject, not ten independent people or five matched participant pairs.

For this paper example, reaction time means elapsed time from a visual cue's onset to the recorded button-press event. Onset means the instant the cue begins. A trial number is its position within a condition, not seconds on a clock. No absolute timestamps, app or device are supplied.

A is labeled baseline: the fictional reference condition without an added concurrent task. B is labeled distraction: the fictional comparison condition with an unspecified concurrent task. These labels are not instructions to perform either condition. Task details, ordering controls, rest intervals and actual setup are unavailable.

All durations are already in milliseconds, abbreviated ms. One ms equals one-thousandth of a second. Centimeters, cm, measure length and are not substituted for time (NIST-SI). Whole-ms entries describe the supplied precision; they do not prove a device's accuracy or resolution.

Columns: row ID | condition | trial within condition | time with unit | review flag | include in original mean? | qualitative observation.

A01 | baseline | 1 | 220 ms | NONE | YES | UNAVAILABLE

A02 | baseline | 2 | 215 ms | NONE | YES | UNAVAILABLE

A03 | baseline | 3 | 225 ms | NONE | YES | UNAVAILABLE

A04 | baseline | 4 | 360 ms | REVIEW | YES | UNAVAILABLE

A05 | baseline | 5 | 230 ms | NONE | YES | UNAVAILABLE

B01 | distraction | 1 | 270 ms | NONE | YES | UNAVAILABLE

B02 | distraction | 2 | 280 ms | NONE | YES | UNAVAILABLE

B03 | distraction | 3 | 265 ms | NONE | YES | UNAVAILABLE

B04 | distraction | 4 | 285 ms | NONE | YES | UNAVAILABLE

B05 | distraction | 5 | 275 ms | NONE | YES | UNAVAILABLE

YES means include the numeric time in its condition mean. NONE means no classroom review flag, not verified instrument quality. UNAVAILABLE means no account of feelings, behavior or events was supplied. It is not zero, a calm response, or evidence of no distraction.

At 8–20, enter the five A rows on your one table. At 20–35, add the five B rows to that same table. Preserve every value and its recorded label. R1 explains the flag and inclusion rule. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

R1: Flag without silently deleting

Original classroom rule, declared before calculation: flag a duration strictly greater than 300 ms for review. Exactly 300 ms would not trigger this flag. This is an author-chosen practice threshold, not a clinical limit or formal statistical outlier test.

Keep every RT1 row and include all ten supplied numeric times in their own condition means. No row has a documented error or authorized exclusion. Missing numeric values would stay missing and out of a mean, with the included count reported; none is missing here.

A04 is 360 ms and carries REVIEW. Add this brief flag note: exceeds the classroom review threshold; retained because no verified error or exclusion is supplied. Do not invent a fumble, device fault or correction. All other rows carry NONE under this rule.

NIST distinguishes a possible outlier from a confirmed error. An unusual value should not simply disappear when its validity is unknown (NIST-OUTLIER). A review flag, a proven error and an authorized exclusion are different things.

Actual route: use the genuine declared quality and inclusion rules. Preserve raw rows, document any authorized exclusions with reasons, and report the included count. If the rule or source is absent, retain the record and ask for what you need before making that decision. Do not force the practice threshold onto actual data.

C1: Calculate each condition separately

Mean, or arithmetic average, equals the sum of included numeric values divided by their count n (NIST-MEAN). Add only values in the same condition and unit. Report sum, n , mean and unit for each condition. A basic calculator is sufficient; no graph, SD or test of significance is assigned.

Original route: A has five included values and B has five included values. Both have zero missing numeric entries and zero exclusions. Keep unrounded arithmetic until the final result. Report final means and their difference to one decimal place in ms; this is a display convention, not extra measured precision.

Compute comparison = B mean minus A mean. A positive value means B has the longer average duration in this record. Longer time is a slower response in the stated event definition. A mean requires at least one included number; if n is zero, report unavailable, not zero.

Arithmetic checks after your attempt: add each condition's five values a second time in reverse order and confirm you get the same sum. Each divisor is 5. A04 stays in the first sum. Five trials are this task's count, not a universal minimum for an average or proof of a person's typical ability.

The two labels do not isolate a cause. Actual reaction-time records can include stimulus detection, response production and hardware/software timing effects. Woods and colleagues separated some influences using additional measures and calibration (WOODS-2015). This paper record supplies none of those measures.

At 35–50, add the two mean calculations, comparison and A04 note to the same table. State only which mean is larger and that mechanism is not established. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

Q1: Honest review of completed numbers

At 50–65, check the table already assembled. Compare all ten values with RT1, confirm ms in every row, and check flags, inclusion labels, sums, counts and averages. Check that the descriptive comparison does not claim a cortical delay or impaired person.

If a partner actually checks your work, record one brief deidentified comment and label it peer review. Otherwise, do the same checks yourself and label them self review. Ask the teacher how to join any required group activity; do not invent participation.

Correct a real discrepancy on the same table and state what changed. If none is found, record one verified value or calculation and retain it. Do not invent an error or peer action. Qualitative notes are handled next; do not demand them before 65–75. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

O1: An observation field is not permission to invent

At 65–75, review the qualitative-observation column already present in RT1. Each row says UNAVAILABLE because no account was supplied. Preserve that marker on all ten rows. Add one shared note: no feelings or behavioral observations supplied; invented values cannot reveal how distraction felt.

A larger time does not establish that someone felt confused, tired or distracted. Do not report a personal experience from a test you did not perform. Do not assign a health, medication or impairment explanation to F1.

Actual route: use only genuinely recorded, appropriate non-private observations allowed by the teacher's protocol. If such an account is absent, mark it unavailable rather than invent it. The actual rubric replaces the practice wording. No new testing or personal health disclosure is requested.

S1: Same table, genuine completion

Use thirteen separate checks. 1: obtain the approved protocol and event definitions. 2: check device/timing quality and units or conversion if relevant. 3: obtain authorization and supervision. 4: follow the participation/privacy process. 5: retain genuine numeric trials. 6: retain genuine qualitative observations.

Also check 7: the actual inclusion/exclusion rules. 8: the teacher rubric and accepted preparation. 9: how to join required peer work. 10: the enrolled official task. 11: your section and deadline. 12: the saved chosen-route file. 13: that Schoology shows Submitted after uploading. Note a short evidence pointer for a check you performed or a specific next action. After uploading, check that Schoology shows Submitted.

Update your existing check notes instead of writing thirteen narratives. A paper table does not certify physical setup, practice, trials, observed feelings or official completion.

Today's official work is Activity 2.1.6 Ready, Set, React!; Activity 2.1.7 Here Comes the Hammer may follow. Confirm the enrolled task and stopping point; this page does not assign a hammer test.

Assignment title: Wk9 Data table: Reaction-time lab. Section 1292:

<https://clevelandmetro.schoology.com/assignment/8544579382> . Section 6792:

<https://clevelandmetro.schoology.com/assignment/8544579404> . Use only the confirmed section. Ask the teacher what preparation to submit and check access and the deadline. Check Schoology after uploading.

At 75–80, save the same labeled table or submit to the confirmed destination if authorized. If access is blocked, save the work locally and tell the teacher what you need. Check Schoology after uploading. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

M1: Separate invented machine-delay example

Optional model: an invented machine has two modes, U and V. No person is tested and no real machine was run. Delay means the interval from a command event to its logged completion. All six values below are supplied durations in ms.

Model columns: row | mode | delay | review flag | include? | observation. U1 | U | 20 ms | NONE | YES | UNAVAILABLE. U2 | U | 30 ms | NONE | YES | UNAVAILABLE. U3 | U | 40 ms | NONE | YES | UNAVAILABLE.

V1 | V | 40 ms | NONE | YES | UNAVAILABLE. V2 | V | 50 ms | NONE | YES | UNAVAILABLE. V3 | V | 90 ms | REVIEW | YES | UNAVAILABLE. Model flag rule: strictly greater than 80 ms. This separate rule is not RT1's 300 ms threshold.

Model inclusion rule: retain and include all supplied numeric rows. No errors or exclusions are supplied. U: $(20+30+40) \text{ ms} / 3 = 30.0 \text{ ms}$. V: $(40+50+90) \text{ ms} / 3 = 60.0 \text{ ms}$. Comparison V minus U = 30.0 ms. Both $n=3$, zero missing numeric values and zero exclusions.

Completed note: V has the longer mean in this invented record. V3 exceeds the model review threshold but stays included; no fault was verified. No event narrative was supplied, so observations remain UNAVAILABLE. These values do not establish why the modes differ.

Worked self-check: 90 is present in both the raw row and V's sum of 180. I retained it under the rule. This is a worked example, not an actual peer comment. Use this method on RT1 without completing another model table. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

Try the decision

Original route: A04 is 360 ms with REVIEW, but no verified error or exclusion is supplied. Use R1. Actual route: use genuine evidence and rules instead.

- Retain A04 in the raw table and mean; note the review flag and unknown cause.
- Delete A04 and claim it was a fumbled trial without verified error evidence.
- Change the recorded 360 ms to 230 ms so the average looks typical.

Explain your choice using the reading. Discuss it or say it to yourself. This practice does not add another submission.

Your 80-minute flow

0–8 minutes	Read H1 and answer once. Start S1 checks and next actions. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.
8–20 minutes	Read RT1/R1 and enter the five baseline rows on one table. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.
20–35 minutes	Add the five distraction-labeled rows to the same table. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.
35–50 minutes	Use C1 for two averages and the difference; add the R1 flag note. M1 is optional help. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.
50–65 minutes	Use Q1 to check completed numerical work and record a genuine correction or verified match. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.
65–75 minutes	Use O1 to preserve missing observations and add one shared note. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.
75–80 minutes	Use S1 to save or submit and update changed checks and next actions. Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

Your response record

Use these labels on paper or in your document. The space below also works when this page is printed.

Check the supplied unit

Original route: answer H1 once using its two records. Actual route: check genuine units or mark missing input.

Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

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Baseline rows on one table

Original route: copy A01–A05 and all seven fields from RT1. Preserve every value and its recorded label.

Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

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Comparison rows on the same table

Original route: add B01–B05 and all seven fields. R1 supplies the handling rule.

Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

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Two means and one descriptive comparison

Original route: use C1 for each sum/n/mean in ms, then B minus A. Use R1 for the A04 note; all rows remain included.

Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

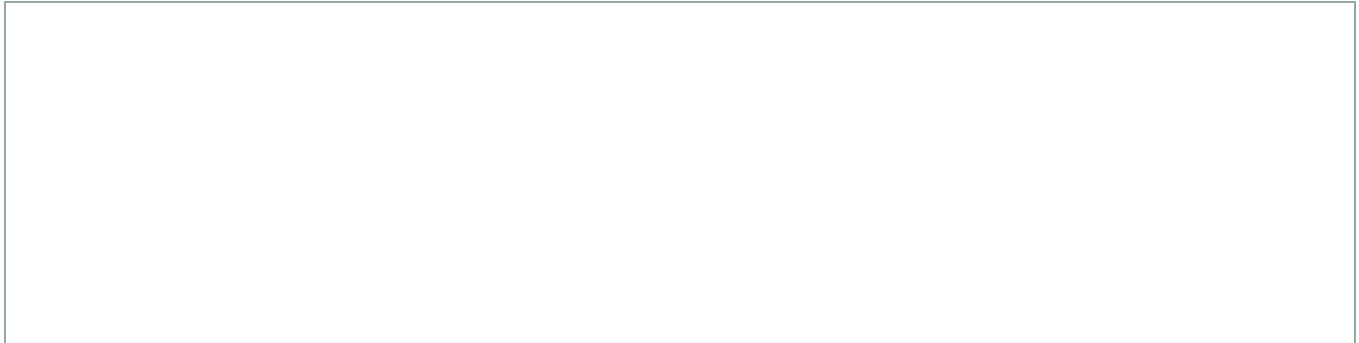
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One honest arithmetic check

Original route: use Q1 on the completed numbers. Record a real correction or verified match and label self/peer honestly.

Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

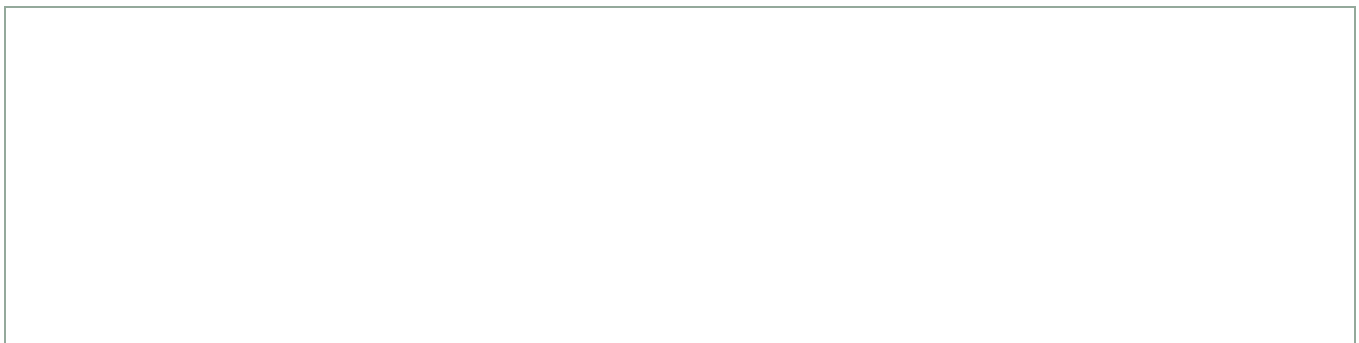


Preserve unavailable observations

Original route: use O1; keep UNAVAILABLE in all ten rows and add the one shared missing-account note. No feelings are invented.

Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.



Save one table and check your next actions

Both routes: use S1 to identify missing inputs and your next action. Use your section's assignment and check Schoology after uploading.

Actual route: genuine teacher-approved data and rubric replace the fictional records, counts, flags and calculation rules. Complete one table only. Ask the teacher for any missing evidence; do not invent it.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

Check your product

- Original route: one table preserves all ten RT1 rows, conditions, trial numbers, ms, flags, inclusion and observation markers.
- Original route: report two sums, two n values, two means and B-minus-A difference; retain A04 and its review note.
- Chosen route: a descriptive comparison does not establish a cortical delay, cause or actual feeling.
- Original route: Q1 checks completed arithmetic; O1 preserves unavailable observations without inventing an account.
- Actual route: genuine assigned data/rubric replace original values, counts, flags and calculations; no second table.
- Both routes: follow the approved protocol for any actual collection, include only participation and work that occur, follow official-task directions and check Schoology after uploading.

Keep the limit: Invented durations support arithmetic and documentation practice only. A difference between these conditions cannot establish causation, brain-region delay, nerve speed, impairment or a real person's experience.

Turn in your work

Submit one chosen-route data table only through your confirmed section. Section 1292:

<https://clevelandmetro.schoology.com/assignment/8544579382> . Section 6792:

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Paper data analysis only. Do not run a ruler-drop, digital reaction-time, reflex, drug or other human/animal test. Actual testing requires the teacher's approved protocol, participation process and supervision. If access is blocked, save the labeled table and tell the teacher what you need. After uploading, check that Schoology shows Submitted.

[Section 1292: Wk9 Data table: Reaction-time lab](#)

[Section 6792: Wk9 Data table: Reaction-time lab](#)

Carry forward

Preserve every trial and explain your inclusion rule; a timing difference describes the record before it explains a cause.

Thursday March 18 examines drug effects on signaling. This invented timing table supplies no drug effect, impairment finding or verified human test. How could a drug alter synaptic signaling without determining a person's reaction time?

Sources and resources

[Open today's page](#)

NIST-MEAN · Measures of Location

NIST/SEMATECH e-Handbook

<https://www.itl.nist.gov/div898/handbook/eda/section3/eda351.htm>

NIST-OUTLIER · Detection of Outliers

NIST/SEMATECH e-Handbook

<https://www.itl.nist.gov/div898/handbook/eda/section3/eda35h.htm>

NIST-SI · The Two Classes of SI Units and the SI Prefixes

NIST Guide to the SI, Chapter 4

<https://www.nist.gov/pml/special-publication-811/nist-guide-si-chapter-4-two-classes-si-units-and-si-prefixes>

WOODS-2015 · Factors influencing the latency of simple reaction time

Woods, Wyma, Yund, Herron and Reed, Frontiers in Human Neuroscience (2015)

<https://www.frontiersin.org/journals/human-neuroscience/articles/10.3389/fnhum.2015.00131/full>