typesetting in columns
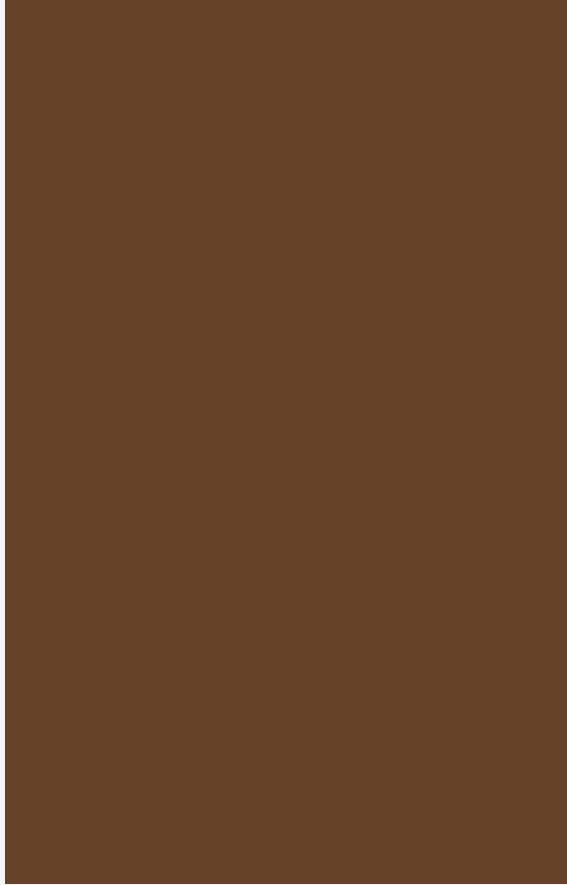
typesetting in columns

TEX was not made
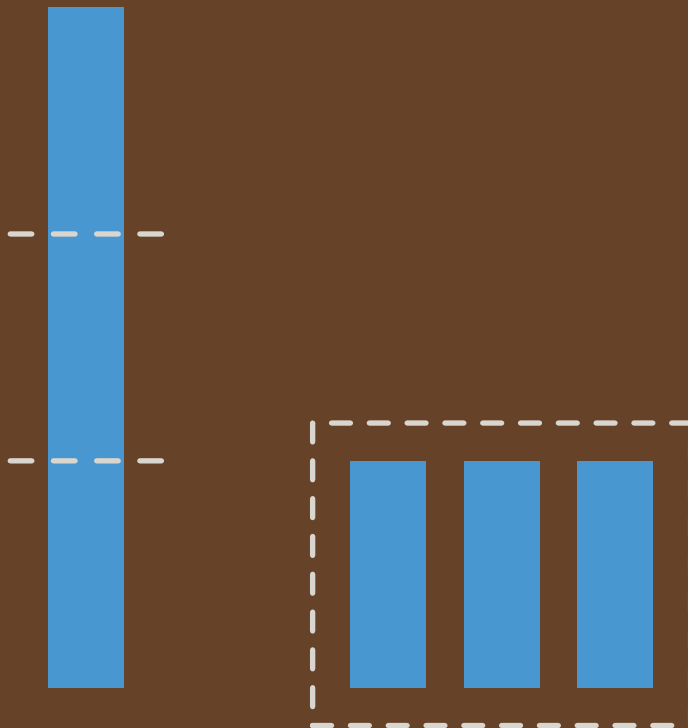to work in columns

yet, it has for long
been possible
to use columns
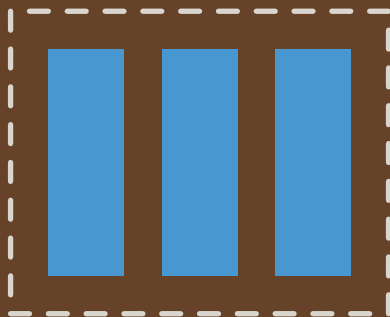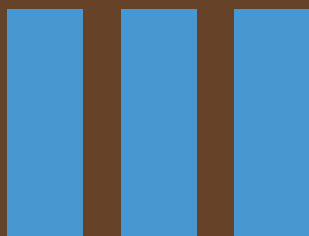
how is this
possible?

typesetting in columns

mixedcolumns

make one big
vbox and split
it with vsplit

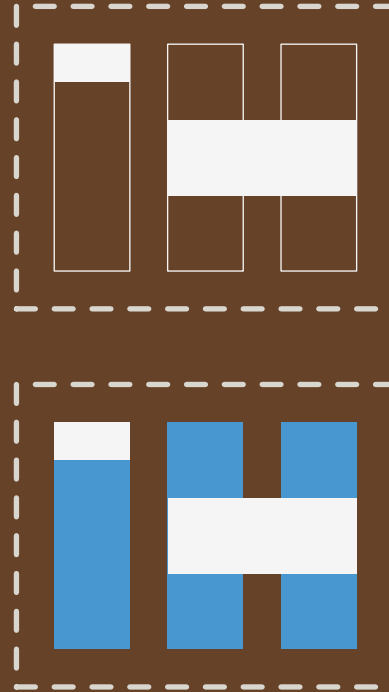# typesetting in columns

pagecolumns

combine several T_EX pages on one physical page

typesetting in columns

old columnsets

work on the grid, keep control of all the occupied slots

add to remaining slots with vsplit

things to consider

Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.

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can we split columns evenly?

things to consider

can we balance the last page?

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things to consider

can we balance the last page?

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things to consider

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can we handle figures, tables and other floats?

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things to consider

even spanning several columns?

Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.

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other grunting noise.

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0.001	6.907755	0.101	2.292635	0.201	1.604450	0.301	1.200645
0.002	6.214608	0.102	2.282782	0.202	1.599488	0.302	1.197328
0.003	5.809143	0.103	2.273026	0.203	1.594549	0.303	1.194022
0.004	5.521461	0.104	2.263364	0.204	1.589635	0.304	1.190728
0.005	5.298317	0.105	2.253795	0.205	1.584745	0.305	1.187444
0.006	5.115996	0.106	2.244316	0.206	1.579879	0.306	1.184170
0.007	4.961845	0.107	2.234926	0.207	1.575036	0.307	1.180908
0.008	4.828314	0.108	2.225624	0.208	1.570217	0.308	1.177655
0.009	4.710531	0.109	2.216407	0.209	1.565421	0.309	1.174414
0.010	4.605170	0.110	2.207275	0.210	1.560648	0.310	1.171183

things to consider

Footnote[1] Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.

Footnote[2] Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.

Footnote[3] Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.

where to put footnotes?

Footnote[4] Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.

Footnote[5] Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.

Footnote[6] Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.

Footnote[7] Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.

Footnote[8] Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.

---

[1] bar
[2] bar
[3] bar

[4] bar
[5] bar

[6] bar
[7] bar
[8] bar

things to consider

can we handle headers . . .

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what about adding content to the margin?

. . . and footers?

things to consider

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can

we

work

on

the

grid?

new columnsets

always work on the grid

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internally work on spreads

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Many readers will skim over formulas on their first reading of your exposition.

place content like images first, make pages out of remaining slots

new columnsets

first assumption: keep it simple!

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we don't know where we are at the moment

other grunting noise.

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more features added during work

define the columnset

```
\definecolumnset
  [bt]
  [n=3,
   limit=4,
   page=right,
   distance=0.5cm,
   % setups=balance:bt,
   % align={defaultwidows,defaultclubs,defaultbroken},
  ]
```
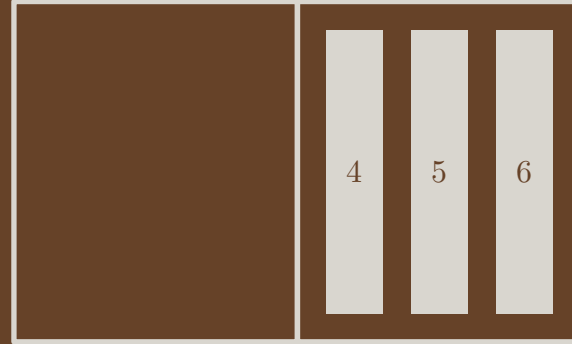
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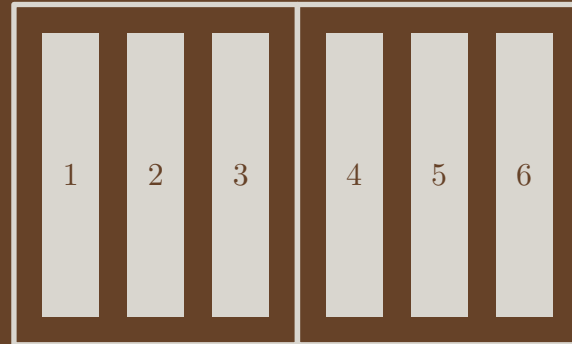
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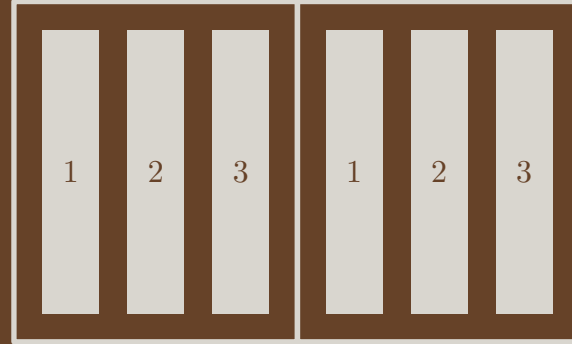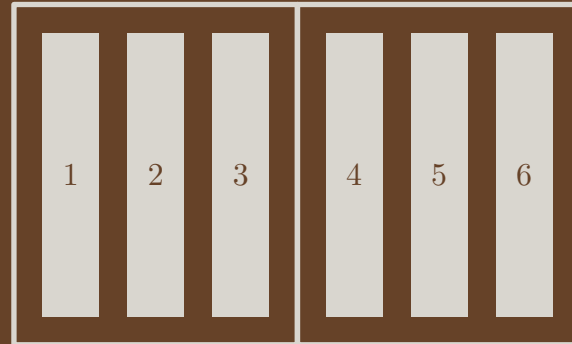
define the columnset

page=right

4 5 6

page=

1 2 3 4 5 6

define the columnset

singlesided	1 2 3 1 2 3
doublesided	1 2 3 4 5 6

use the columnset

```
\startcolumnset[bt]
```

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```
\stopcolumnset
```
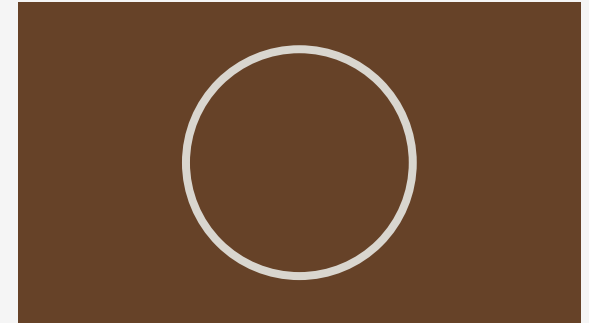
placing content in fixed slots

```
\startcolumnsetsheet[bt][1]
\startsetcolumnset
  [c=3,r=8,ntop=1,nbottom=1]
  \startframed[Fig][height=8gl]
    \startMPcode
      draw fullcircle
      xsized 3cm
      withpen pencircle scaled 3
      withcolor "C:2" ;
    \stopMPcode
  \stopframed
\stopsetcolumnset
\stopcolumnsetsheet
```

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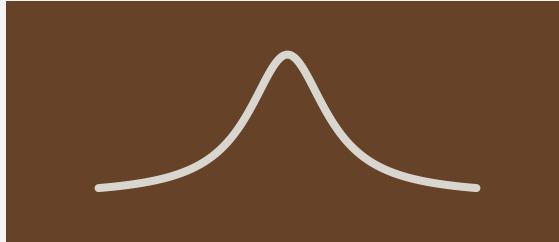
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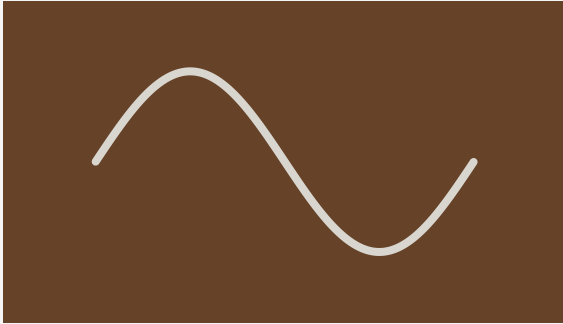

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placing content in fixed slots

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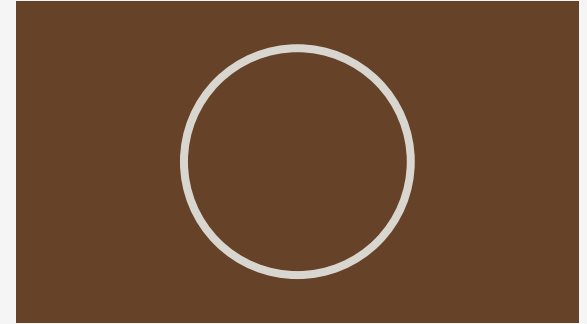Many readers will skim over formulas on their first reading of your exposition.

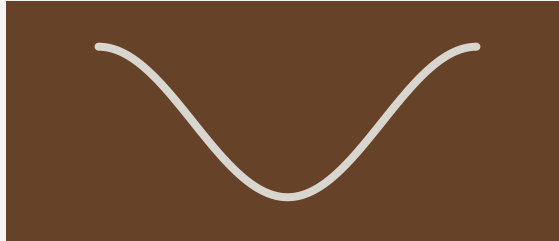Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.
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placing content in fixed slots

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slots get reserved or occupied

```
\startcolumnsetsheet[bt][1]

\startsetcolumnset[c=3,r=1,nbottom=1]
  \startframed[Fig]
    this content has been placed first
  \stopframed
\stopsetcolumnset

\startsetcolumnset[c=3,r=6,ntop=1,nbottom=1]
  \startframed[Fig]
    this content will not show up
  \stopframed
\stopsetcolumnset

\reservecolumnset[c=2,r=1,nr=11]

\stopcolumnsetsheet
```

this content has been placed first

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Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest

work on sheet or spread

```
\startcolumnsetspreadsheets[bt][1]

\startsetcolumnset[c=5,r=17,ntop=1]
  \startframed[Fig]
    where will this content end up?
  \stopframed
\stopsetcolumnset

\stopcolumnsetspreadsheets
```

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Many readers will skim over formulas on their first reading of your exposition.

work on sheet or spread

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where will this content end up?

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how about footnotes?

```
\setupnotes
  [width=\columnsetspanwidth{1}]
```

Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.[9]

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Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.[12]

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works fine on simple page setups but . . .

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[9] This is a footnote.
[10] This is in fact an even longer footnote. Maybe it will run over two rows?

[11] This is a footnote.
[12] This is in fact an even longer footnote. Maybe it will run over two rows?
[13] This is a footnote.

[14] This is in fact an even longer footnote. Maybe it will run over two rows?
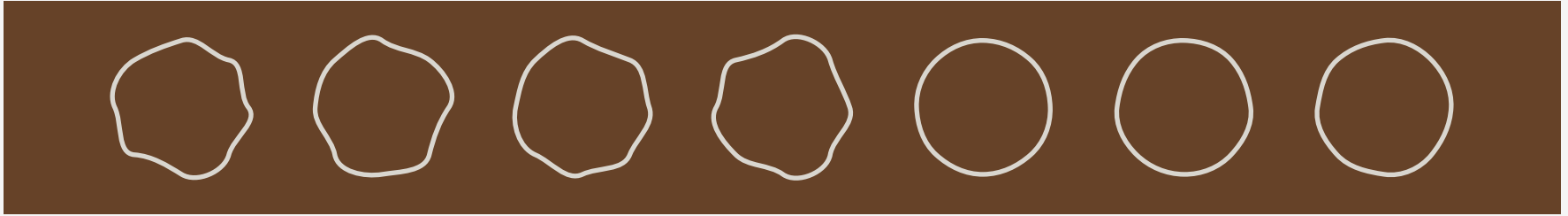[15] This is a footnote.

how about footnotes?

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[16] This is in fact an even longer footnote. Maybe it will run over two rows?

_____
[18] This is in fact an even longer footnote. Maybe it will run over two rows?

. . .remember we work in slots!

can we balance the columns?

```
\definesubcolumnset[bt][bts][*]

\dorecurse{7}{%
  \startsubcolumnset[bts]
    \samplefile{knuthmath}
  \stopsubcolumnset
  \balancesubcolumnsets
}
```

yes, we can!

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wait, subcolumnsets?

```
\definesubcolumnset[bt][bts-one]   [1,4]
\definesubcolumnset[bt][bts-two]   [2,5]
\definesubcolumnset[bt][bts-three][3,6]

\startsubcolumnset[bts-one]
  \dorecurse{2}{\samplefile{tufte}\par}
\stopsubcolumnset

\startsubcolumnset[bts-two]
  \dorecurse{5}{\italic \samplefile{ward}\par}
\stopsubcolumnset

\startsubcolumnset[bts-three]
  \setupcolors[textcolor=C:3]
  \dorecurse{7}{\samplefile{knuthmath}\par}
\stopsubcolumnset

\flushsubcolumnsets
```
We thrive in information—thick worlds because of our marvelous and everyday capacity to select, edit, single out, structure, highlight, group, pair,

The Earth, as a habitat for animal life, is in old age and has a fatal illness. Several, in fact. It would be happening whether humans had ever evolved or not.

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wait, subcolumnsets?

merge, harmonize, synthesize, focus, organize, condense, reduce, boil down, choose, categorize, catalog, classify, list, abstract, scan, look into, idealize, isolate, discriminate, distinguish, screen, pigeonhole, pick over, sort, integrate, blend, inspect, filter, lump, skip, smooth, chunk, average, approximate, cluster, aggregate, outline, summarize, itemize, review, dip into, flip through, browse, glance into, leaf through, skim, refine, enumerate, glean, synopsize, winnow the wheat from the chaff and separate the sheep from the goats.

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isolate, discriminate, distinguish, screen, pigeonhole, pick over, sort, integrate, blend, inspect, filter, lump, skip, smooth, chunk, average, approximate, cluster, aggregate, outline, summarize, itemize, review, dip into, flip through, browse, glance into, leaf through, skim, refine, enumerate, glean, synopsize, winnow the wheat from the chaff and separate the sheep from the goats.

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15. (This procedure maintains four integers (A, B, C, D) with the invariant meaning that "our remaining job is to output the continued fraction for $(Ay + B)/(Cy + D)$, where y is the input yet to come.") Initially set $j \leftarrow k \leftarrow 0$, $(A, B, C, D) \leftarrow (a, b, c, d)$; then input x_j and set $(A, B, C, D) \leftarrow (Ax_j + B, A, Cx_j + D, C)$, $j \leftarrow j + 1$, one or more times until $C + D$ has the same sign as C. (When $j > 1$ and the input has not terminated, we know that $1 < y < \infty$; and when $C + D$ has the same sign as C we know therefore that $(Ay + B)/(Cy + D)$ lies between $(A + B)/(C + D)$ and A/C.) Now comes the general step: If no integer lies strictly between $(A + B)/(C + D)$ and A/C, output $X_k \leftarrow \lfloor A/C \rfloor$, and set $(A, B, C, D) \leftarrow (C, D, A - X_k C, B - X_k D)$, $k \leftarrow k + 1$; otherwise input x_j and set $(A, B, C, D) \leftarrow (Ax_j + B, A, Cx_j + D, C)$,

$j \leftarrow j + 1$. The general step is repeated ad infinitum. However, if at any time the *final* x_j is input, the algorithm immediately switches gears: It outputs the continued fraction for $(Ax_j + B)/(Cx_j + D)$, using Euclid's algorithm, and terminates.

both inline and displayed math are difficult to handle

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$$f(x) = f(a) + \int_a^x f'(t)\,dt$$

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$$f(x) = f(a) + \int_a^x f'(t)\,dt$$
$$= \frac{d}{dx} \int_a^x f(t)\,dt$$

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it is a challenge to stay on grid

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section heads are typically set in a larger font

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see the details manual for more alternatives