

In[136]= Remove[x];

In[137]= k =

1 762 676 465 144 323 736 067 531 492 445 426 472 572 506 888 133 023 637 595 124 094 781 ∙
513 311 794 822 925 047 637 182 709 666

Out[137]= 1 762 676 465 144 323 736 067 531 492 445 426 472 572 506 888 133 023 637 595 124 094 781 513 ∙
311 794 822 925 047 637 182 709 666

In[138]= X = Flatten[Array[Subscript[x, #1] &, {20, 1}]];

In[139]= T = (3 X[[1]] - 9 X[[5]] * X[[6]]) * (14 X[[3]]^3 - 56 X[[4]] * X[[7]]) * (2 X[[4]] - 9 X[[2]]^2 * X[[9]]) *
(17 X[[6]] - 61 X[[8]] * X[[11]]) (X[[13]] + X[[16]]^2 - 9 X[[14]] * X[[18]]) *
(X[[12]] - 9 X[[15]] * X[[19]]) * (X[[10]] - 9 X[[17]] * X[[20]]) -
4 034 500 221 X[[1]]^2 * X[[4]] * X[[7]]^3 * X[[9]] * X[[10]]^2 * X[[18]] * X[[20]]^3

Out[139]= -4 034 500 221 x₁² x₄ x₇³ x₉ x₁₀² x₁₈ x₂₀³ + (3 x₁ - 9 x₅ x₆) * (14 x₃³ - 56 x₄ x₇) *
(2 x₄ - 9 x₂² x₉) * (17 x₆ - 61 x₈ x₁₁) (x₁₃ + x₁₆² - 9 x₁₄ x₁₈) (x₁₂ - 9 x₁₅ x₁₉) (x₁₀ - 9 x₁₇ x₂₀)

In[140]= X = Table[RandomInteger[{-258000, 258000}], 20];

In[141]= T = (3 X[[1]] - 9 X[[5]] * X[[6]]) * (14 X[[3]]^3 - 56 X[[4]] * X[[7]]) * (2 X[[4]] - 9 X[[2]]^2 * X[[9]]) *
(17 X[[6]] - 61 X[[8]] * X[[11]]) (X[[13]] + X[[16]]^2 - 9 X[[14]] * X[[18]]) *
(X[[12]] - 9 X[[15]] * X[[19]]) * (X[[10]] - 9 X[[17]] * X[[20]]) -
4 034 500 221 X[[1]]^2 * X[[4]] * X[[7]]^3 * X[[9]] * X[[10]]^2 * X[[18]] * X[[20]]^3

Out[141]= 3 003 402 458 101 001 866 226 493 332 391 386 938 700 723 009 182 097 484 949 204 380 461 190 ∙
670 292 563 492 642 944 000

In[154]= While[RealAbs[T - k] > .00001 k,

X = Table[

RandomInteger[{RandomInteger[{-258000, 0}], RandomInteger[{0, 258000}]}], 20];

T = (3 X[[1]] - 9 X[[5]] * X[[6]]) * (14 X[[3]]^3 - 56 X[[4]] * X[[7]]) * (2 X[[4]] - 9 X[[2]]^2 * X[[9]]) *
(17 X[[6]] - 61 X[[8]] * X[[11]]) (X[[13]] + X[[16]]^2 - 9 X[[14]] * X[[18]]) *
(X[[12]] - 9 X[[15]] * X[[19]]) * (X[[10]] - 9 X[[17]] * X[[20]]) -
4 034 500 221 X[[1]]^2 * X[[4]] * X[[7]]^3 * X[[9]] * X[[10]]^2 * X[[18]] * X[[20]]^3;

Out[154]= \$Aborted

T

X

```
In[163]:= While[RealAbs[T - k] > .0000001 k,
```

```
X[[1]] = RandomInteger[{-1 156 411, 1 156 411}];
```

```
X[[2]] = RandomInteger[{-581 531, 581 531}];
```

```
X[[3]] = RandomInteger[{-818 850, 818 850}];
```

```
X[[4]] = RandomInteger[{-1 606 456, 1 606 456}];
```

```
X[[5]] = RandomInteger[{-397 597, 397 597}];
```

```
X[[6]] = RandomInteger[{-603 880, 603 880}];
```

```
X[[7]] = RandomInteger[{-541 544, 541 544}];
```

```
X[[8]] = RandomInteger[{-246 015, 246 015}];
```

```
X[[9]] = RandomInteger[{-481 183, 481 183}];
```

```
X[[10]] = RandomInteger[{-2 068 060, 2 068 060}];
```

```
X[[11]] = RandomInteger[{-940 603, 940 603}];
```

```
X[[12]] = RandomInteger[{-78 791, 78 791}];
```

```
X[[13]] = RandomInteger[{-615 863, 615 863}];
```

```
X[[14]] = RandomInteger[{-1 385 342, 1 385 342}];
```

```
X[[15]] = RandomInteger[{-1 619 879, 1 619 879}];
```

```
X[[16]] = RandomInteger[{-288 391, 288 391}];
```

```
X[[17]] = RandomInteger[{-989 924, 989 924}];
```

```
X[[18]] = RandomInteger[{-1 804 882, 1 804 882}];
```

```
X[[19]] = RandomInteger[{-743 138, 743 138}];
```

```
X[[20]] = RandomInteger[{-554 790, 554 790}];
```

$$T = (3 X[[1]] - 9 X[[5]] \times X[[6]]) \times (14 X[[3]]^3 - 56 X[[4]] \times X[[7]]) \times (2 X[[4]] - 9 X[[2]]^2 \times X[[9]]) \times$$

$$(17 X[[6]] - 61 X[[8]] \times X[[11]]) (X[[13]] + X[[16]]^2 - 9 X[[14]] \times X[[18]]) \times$$

$$(X[[12]] - 9 X[[15]] \times X[[19]]) \times (X[[10]] - 9 X[[17]] \times X[[20]]) -$$

$$4 034 500 221 X[[1]]^2 \times X[[4]] \times X[[7]]^3 \times X[[9]] \times X[[10]]^2 \times X[[18]] \times X[[20]]^3;$$

```
Out[163]= $Aborted
```

```
In[161]:= T
```

X

1 762 676 465 144 323 736 067 531 492 445 426 472 572 506 888 133 023 637 595 124 094 781 ∙
513 311 794 822 925 047 637 182 709 666 = k

1 762 676 021 002 622 892 795 168 725 796 267 416 630 597 604 317 946 149 108 699 075 316 ∙
602 401 134 606 232 904 398 630 662 912

1 762 667 818 679 350 212 847 821 140 064 569 507 620 711 557 964 059 216 568 942 808 005 ∙
761 874 443 631 162 930 874 147 944 680

1 762 752 406 819 777 791 529 530 327 599 572 662 391 301 012 625 945 239 985 842 222 323 ∙
132 546 595 647 521 400 302 562 375 680

1 762 847 010 350 434 634 953 303 025 489 436 633 560 258 864 626 134 233 475 652 600 919 ∙
910 572 466 886 276 756 453 825 447 680

{560 457, 177 373, -474 478, 758 101, 169 949, 334 264,
-11 695, 4152, -452 552, -2 043 222, -773 294, 32 413, -386 466,
1 048 283, -1 308 906, 282 065, -854 134, 1 003 178, 382 027, -282 924}

{850 773, 319 166, 125 991, 574 879, 349 343, 511 564, 341 509,
-127 532, -116 385, -1 622 766, 677 200, -37 338, 575 252, -1 352 821,
-1 458 522, -69 339, -618 535, -864 902, -294 361, -307 657}

{442 041, -186 929, 307 892, -1 606 456, -397 597, 1 603 880,
541 544, 246 015, 481 183, -2 068 060, 940 603, 78 791, 615 863,
445 008, 9265, 288 391, 810 831, -1 804 882, 582 701, 135 713}

{1 156 411, -581 531, -818 850, -1 070 344, -285 794, -217 840, 70 110, -5034, -62 855,
6271, -326 556, 54 260, 476 995, 1 385 342, 1 619 879, 118 986, 989 924, 33 090,
743 138, 554 790}

In[167]:= X = {560 457, 177 373, -474 478, 758 101, 169 949, 334 264, -11 695, 4152, -452 552, -2 043 222,
-773 294, 32 413, -386 466, 1 048 283, -1 308 906, 282 065, -854 134, 1 003 178, 382 027, -282 924}

Out[167]= {560 457, 177 373, -474 478, 758 101, 169 949, 334 264, -11 695, 4152, -452 552, -2 043 222,
-773 294, 32 413, -386 466, 1 048 283, -1 308 906, 282 065, -854 134, 1 003 178, 382 027, -282 924}

In[168]:= T = (3 X[[1]] - 9 X[[5]] × X[[6]]) ×
(14 X[[3]]^3 - 56 X[[4]] × X[[7]]) × (2 X[[4]] - 9 X[[2]]^2 × X[[9]]) ×
(17 X[[6]] - 61 X[[8]] × X[[11]]) (X[[13]] + X[[16]]^2 - 9 X[[14]] × X[[18]]) ×
(X[[12]] - 9 X[[15]] × X[[19]]) × (X[[10]] - 9 X[[17]] × X[[20]]) -
4 034 500 221 X[[1]]^2 × X[[4]] × X[[7]]^3 × X[[9]] × X[[10]]^2 × X[[18]] × X[[20]]^3

Out[168]= 1 762 676 021 002 622 892 795 168 725 796 267 416 630 597 604 317 946 149 108 699 075 316 602 401 134 606 ∙
232 904 398 630 662 912

In[169]= $X = \{850\,773, 319\,166, 125\,991, 574\,879, 349\,343, 511\,564,$
 $341\,509, -127\,532, -116\,385, -1\,622\,766, 677\,200, -37\,338, 575\,252,$
 $-1\,352\,821, -1\,458\,522, -69\,339, -618\,535, -864\,902, -294\,361, -307\,657\}$

Out[169]= $\{850\,773, 319\,166, 125\,991, 574\,879, 349\,343, 511\,564,$
 $341\,509, -127\,532, -116\,385, -1\,622\,766, 677\,200, -37\,338, 575\,252,$
 $-1\,352\,821, -1\,458\,522, -69\,339, -618\,535, -864\,902, -294\,361, -307\,657\}$

In[170]= $T = (3 X[[1]] - 9 X[[5]] \times X[[6]]) \times$
 $(14 X[[3]]^3 - 56 X[[4]] \times X[[7]]) \times (2 X[[4]] - 9 X[[2]]^2 \times X[[9]]) \times$
 $(17 X[[6]] - 61 X[[8]] \times X[[11]]) (X[[13]] + X[[16]]^2 - 9 X[[14]] \times X[[18]]) \times$
 $(X[[12]] - 9 X[[15]] \times X[[19]]) \times (X[[10]] - 9 X[[17]] \times X[[20]]) -$
 $4\,034\,500\,221 X[[1]]^2 \times X[[4]] \times X[[7]]^3 \times X[[9]] \times X[[10]]^2 \times X[[18]] \times X[[20]]^3$

Out[170]= $1\,762\,667\,818\,679\,350\,212\,847\,821\,140\,064\,569\,507\,620\,711\,557\,964\,059\,216\,568\,942\,808\,005\,761\,874\,443\,631 :$
 $162\,930\,874\,147\,944\,680$