

Ps4\_report  
Jared Kinneer  
436828

1a:

transform

[[-0.45827554 0.29474236 0.01395749 -0.00402579]

[ 0.05085589 0.05458471 0.54105993 0.05237592]

[-0.10900958 -0.1783455 0.04426783 -0.5968205 ]]

<u, v> first

[[ 1.04675226]

[-0.36260293]]

<u, v> last

[[ 0.14190605]

[-0.451843 ]]

residual first point

[0.00264821]

residual last point

[0.4065751]

1b:

K=8 residuals	K=12 residuals	K=16 residuals
.0096	.0020	.0031
.0116	.0092	.0024
.0046	.0050	.0031
.0033	.0043	.0030
.0048	.0046	.0018
.0079	.0061	.0051
.0151	.0048	.0017
.0041	.0051	.0062
.0030	.0061	.0018
.0156	.0045	.0027

best m

[[-0.45823345 0.29491868 0.01376227 -0.00407002]

[ 0.05078784 0.05452477 0.54135718 0.05227555]

[-0.10892486 -0.17804328 0.04392604 -0.5966514 ]]

Differences: with k = 8, the residuals had the most variability, and k=16 had the lowest variability overall

Ps4\_report  
Jared Kinneer  
436828

With  $k=12$  being somewhere in the middle

1c:

My calculated center was

$[-1.5155537]$

$[-2.35420549]$

$[0.28273153]$

2a:

$F_{\text{tilda}} =$

$[-6.60698417\text{e-}07 \ 8.82396296\text{e-}06 \ -9.07382302\text{e-}04]$

$[7.91031621\text{e-}06 \ 1.21382933\text{e-}06 \ -2.64234650\text{e-}02]$

$[-1.88600198\text{e-}03 \ 1.72332901\text{e-}02 \ 9.99500092\text{e-}01]$

2b:

$F_{\text{rank2}} =$

$[-5.36264198\text{e-}07 \ 8.83539184\text{e-}06 \ -9.07382264\text{e-}04]$

$[7.90364771\text{e-}06 \ 1.21321685\text{e-}06 \ -2.64234650\text{e-}02]$

$[-1.88600204\text{e-}03 \ 1.72332901\text{e-}02 \ 9.99500092\text{e-}01]$

Ps4\_report  
Jared Kinneer  
436828

2c:

