## Table: Euclidean Distances of Samples and Dominating colors

| **Item** | **File** | **Mean RGB** | **Euclidean Distance** | | | | | **Mean Distance** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Red** | **Green** | **Blue** | **Orange** | **Black** |
| Apple | 1 | (193.231, 80.874, 90.386) | 136.109 | 275.368 | 266.414 | 138.066 | 228.141 | 142.794 258.044 256.126 150.887  197.296 |
| 2 | (170.295, 68.466, 68.855) | 128.854 | 261.795 | 261.416 | 145.721 | 196.033 |
| 3 | (176.153, 73.855, 52.699) | 120.202 | 258.110 | 278.226 | 131.535 | 198.145 |
| 4 | (161.650, 79.010, 62.306) | 137.255 | 246.952 | 263.636 | 141.388 | 190.408 |
| 5 | (177.950, 81.256, 72.384) | 133.337 | 259.022 | 267.614 | 134.868 | 208.585 |
| 6 | (129.912, 36.670, 66.489) | 146.331 | 262.613 | 231.858 | 191.146 | 150.473 |
| 7 | (194.058, 100.970, 97.302) | 152.894 | 266.180 | 269.670 | 131.460 | 239.418 |
| 8 | (155.101, 100.376, 85.940) | 165.653 | 235.266 | 250.426 | 146.771 | 203.757 |
| 9 | (160.342, 85.722, 97.703) | 160.792 | 252.805 | 240.417 | 157.451 | 206.406 |
| 10 | (130.466, 37.620, 67.396) | 146.513 | 262.331 | 231.586 | 190.464 | 151.587 |
| Orange | 1 | (218.013, 159.721, 68.682) | 177.753 | 247.639 | 328.260 | 78.187 | 278.851 | 154.150 250.492 336.472 066.515  261.255 |
| 2 | (239.910, 139.596, 33.696) | 144.396 | 268.346 | 354.991 | 44.816 | 279.605 |
| 3 | (237.958, 125.259, 21.647) | 128.253 | 271.892 | 356.044 | 48.356 | 269.782 |
| 4 | (226.688, 168.046, 46.339) | 176.601 | 247.176 | 350.951 | 54.389 | 285.962 |
| 5 | (219.644, 146.446, 37.858) | 155.337 | 247.913 | 341.819 | 55.023 | 266.689 |
| 6 | (241.326, 146.587, 33.187) | 150.918 | 266.632 | 359.063 | 40.341 | 284.300 |
| 7 | (141.965, 98.229, 23.475) | 151.581 | 212.797 | 288.802 | 133.366 | 174.224 |
| 8 | (203.765, 120.161, 43.670) | 137.734 | 248.211 | 317.205 | 80.887 | 240.553 |
| 9 | (206.990, 146.179, 44.625) | 160.208 | 238.072 | 329.348 | 68.196 | 257.302 |
| 10 | (226.692, 147.347, 51.773) | 158.723 | 256.240 | 338.233 | 61.591 | 275.283 |
| Ball | 1 | (146.212, 72.622, 93.611) | 160.847 | 251.799 | 229.561 | 170.680 | 188.189 | 165.890 235.242 283.602 132.859  219.730 |
| 2 | (155.612, 59.023, 58.775) | 129.678 | 257.053 | 257.299 | 156.728 | 176.503 |
| 3 | (126.262, 90.670, 72.922) | 173.529 | 219.691 | 239.406 | 165.578 | 171.699 |
| 4 | (155.619, 93.236, 85.976) | 161.126 | 240.368 | 247.950 | 149.729 | 200.754 |
| 5 | (187.624, 88.925, 42.303) | 119.317 | 254.113 | 297.238 | 110.075 | 211.896 |
| 6 | (200.475, 72.295, 26.809) | 94.436 | 272.563 | 312.230 | 110.842 | 214.792 |
| 7 | (154.346, 83.211, 56.301) | 142.214 | 237.706 | 265.006 | 141.388 | 184.164 |
| 8 | (182.274, 198.658, 61.828) | 220.401 | 200.552 | 331.669 | 101.215 | 276.607 |
| 9 | (194.328, 208.147, 52.726) | 223.128 | 206.733 | 349.290 | 91.229 | 289.601 |
| 10 | (177.067, 196.645, 100.590) | 234.224 | 211.840 | 306.372 | 131.124 | 283.090 |
| Smartphone | 1 | (55.345, 68.984, 73.313) | 223.597 | 207.460 | 202.068 | 233.358 | 114.877 | 205.290 225.556 220.712 213.384 139.613 |
| 2 | (41.421, 37.004, 35.265) | 219.610 | 224.681 | 226.646 | 251.480 | 65.792 |
| 3 | (77.050, 73.511, 81.945) | 209.249 | 213.518 | 203.195 | 216.220 | 134.371 |
| 4 | (42.387, 42.947, 47.309) | 222.006 | 221.361 | 216.278 | 249.678 | 76.676 |
| 5 | (51.068, 59.649, 71.769) | 224.270 | 214.290 | 199.347 | 240.494 | 106.381 |
| 6 | (50.029, 47.343, 53.216) | 216.993 | 220.127 | 213.215 | 242.256 | 87.042 |
| 7 | (84.980, 86.458, 93.217) | 212.299 | 210.516 | 202.164 | 209.200 | 152.925 |
| 8 | (147.931, 99.053, 66.009) | 160.101 | 224.855 | 259.639 | 142.020 | 189.875 |
| 9 | (123.435, 142.116, 160.415) | 251.474 | 231.758 | 210.664 | 208.724 | 247.318 |
| 10 | (197.980, 61.660, 76.048) | 113.298 | 286.984 | 273.901 | 140.405 | 220.865 |
| TV | 1 | (77.456, 81.724, 87.312) | 214.065 | 208.920 | 201.983 | 214.662 | 142.484 | 217.890 216.877 214.322 238.087 94.345 |
| 2 | (44.236, 41.118, 43.643) | 219.126 | 222.726 | 219.816 | 248.339 | 74.514 |
| 3 | (35.295, 40.921, 42.460) | 227.481 | 221.083 | 219.302 | 255.868 | 68.725 |
| 4 | (31.882, 34.029, 40.196) | 229.248 | 226.848 | 219.806 | 261.820 | 61.565 |
| 5 | (41.792, 45.820, 45.172) | 222.704 | 218.043 | 218.800 | 248.397 | 76.725 |
| 6 | (46.750, 41.777, 46.710) | 217.474 | 223.229 | 217.521 | 246.442 | 78.184 |
| 7 | (51.723, 52.835, 53.779) | 216.806 | 215.495 | 214.375 | 238.315 | 91.428 |
| 8 | (70.088, 75.582, 77.717) | 214.348 | 207.708 | 205.071 | 219.608 | 129.093 |
| 9 | (68.179, 64.724, 63.756) | 207.740 | 211.938 | 213.100 | 221.408 | 113.589 |
| 10 | (63.616, 61.231, 60.674) | 209.900 | 212.779 | 213.444 | 226.002 | 107.134 |

## Table: Semantic Cosine Similarity of Samples

| **Item** | **Cosine Similarity of Word2Vec vectors with items** | | |
| --- | --- | --- | --- |
| **Fruit** | **Gadget** | **Sport** |
| Apple | 0.151 | 0.360 | -0.021 |
| Orange | 0.144 | 0.137 | 0.024 |
| Ball | 0.159 | 0.147 | 0.167 |
| Smartphone | 0.116 | 0.566 | 0.064 |
| TV | 0.0149 | 0.223 | 0.165 |

Color Codes:

Green: Most likely to be a part of

Orange: Moderately likely to be a part of

Red: Least likely to be a part of

## Table: Minkowski Distances with L2 Norm of Sample Edges

| **Item** | **File** | **Minkowski Distance** | | **Average** | | **Conclusion** |
| --- | --- | --- | --- | --- | --- | --- |
| **Circle** | **Rectangle / Square** |
|  | | **Circle** | **Rectangle / Square** |
| Apple | 1 | 3505.740 | 3747.785 | 3420.138 | 3691.329 | **Apple** has a structure which is closer to a **circle**. |
| 2 | 3185.017 | 3633.253 |
| 3 | 3421.268 | 3624.310 |
| 4 | 3570.055 | 3730.381 |
| 5 | 3334.608 | 3651.092 |
| 6 | 3154.216 | 3695.340 |
| 7 | 3533.440 | 3704.142 |
| 8 | 3496.448 | 3704.150 |
| 9 | 3305.250 | 3606.313 |
| 10 | 3695.339 | 3816.526 |
| Orange | 1 | 3487.125 | 3884.094 | 3303.892 | 3723.989 | **Orange** has a structure which is closer to a **circle**. |
| 2 | 3677.711 | 3867.313 |
| 3 | 3027.988 | 3597.249 |
| 4 | 3533.421 | 3747.755 |
| 5 | 3421.224 | 3633.230 |
| 6 | 2984.723 | 3677.689 |
| 7 | 3570.049 | 3782.308 |
| 8 | 3606.291 | 3677.706 |
| 9 | 3421.246 | 3730.387 |
| 10 | 2309.143 | 3642.155 |
| Ball | 1 | 3285.544 | 3668.902 | 2947.230 | 3588.020 | **Ball** has a structure which is closer to a **circle**. |
| 2 | 2588.099 | 3579.200 |
| 3 | 2929.858 | 3373.449 |
| 4 | 3154.277 | 3542.666 |
| 5 | 2613.073 | 3551.822 |
| 6 | 3081.254 | 3677.733 |
| 7 | 2918.699 | 3533.465 |
| 8 | 2862.405 | 3659.975 |
| 9 | 2793.428 | 3615.290 |
| 10 | 3245.663 | 3677.703 |
| Smartphone | 1 | 3487.139 | 3205.365 | 3334.128 | 3279.443 | **Smartphone** has a structure which is closer to a **rectangle / square.** |
| 2 | 3411.718 | 3038.723 |
| 3 | 3295.387 | 2918.667 |
| 4 | 3383.007 | 3449.623 |
| 5 | 3255.684 | 3459.046 |
| 6 | 3402.188 | 3756.444 |
| 7 | 3295.375 | 2962.877 |
| 8 | 3112.723 | 3006.454 |
| 9 | 3315.050 | 3275.582 |
| 10 | 3383.010 | 3721.653 |
| TV | 1 | 3235.645 | 3174.778 | 3370.964 | 3371.946 | **TV** has a structure closer to both **circle** and **rectangle / square**. |
| 2 | 3373.381 | 3265.638 |
| 3 | 3551.767 | 3560.907 |
| 4 | 3459.022 | 3383.001 |
| 5 | 3334.608 | 3315.044 |
| 6 | 3285.492 | 2710.745 |
| 7 | 3363.729 | 3324.848 |
| 8 | 3245.679 | 3411.703 |
| 9 | 3275.593 | 3175.593 |
| 10 | 3747.767 | 3747.767 |