The next page has randomly generated numbers from a normal distribution with mean 75 and sd 12. After you have randomly selected 30 numbers, calculate the sample mean and standard deviation. From there, construct a 95% confidence interval and a 50% confidence interval for the true mean. Show your work and highlight your results below. In each case, indicate whether or not you were successful in capturing the true mean within your confidence interval.

Sample mean: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Sample standard deviation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **95% Confidence interval  
     
     
     
     
     
     
     
     
     
     
     
     
     
     
     
     
    My 95% confidence interval is [ , ]. Did it capture the true mean? \_\_\_\_\_\_\_\_\_\_**
2. **50% Confidence interval  
     
     
     
     
     
     
     
     
     
     
     
     
     
     
     
     
    My 50% confidence interval is [ , ]. Did it capture the true mean? \_\_\_\_\_\_\_\_\_\_**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 71 | 67 | 83 | 67 | 73 | 92 | 76 | 75 | 88 | 63 | 52 | 78 | 76 | 63 | 74 | 60 | 57 | 81 | 105 | 60 |
| 69 | 65 | 80 | 75 | 88 | 63 | 78 | 75 | 70 | 83 | 63 | 76 | 68 | 62 | 70 | 67 | 94 | 61 | 95 | 81 |
| 70 | 61 | 58 | 38 | 111 | 95 | 102 | 87 | 98 | 79 | 85 | 115 | 72 | 68 | 82 | 86 | 58 | 51 | 80 | 76 |
| 94 | 82 | 70 | 82 | 101 | 79 | 62 | 94 | 98 | 77 | 88 | 60 | 73 | 85 | 99 | 82 | 90 | 74 | 54 | 53 |
| 79 | 71 | 108 | 50 | 60 | 94 | 61 | 63 | 117 | 71 | 80 | 83 | 64 | 77 | 69 | 101 | 71 | 78 | 57 | 85 |
| 83 | 85 | 70 | 60 | 84 | 79 | 64 | 63 | 91 | 101 | 68 | 69 | 77 | 68 | 58 | 60 | 101 | 106 | 85 | 87 |
| 77 | 71 | 55 | 61 | 93 | 55 | 82 | 58 | 52 | 67 | 61 | 89 | 83 | 87 | 79 | 68 | 67 | 88 | 71 | 74 |
| 98 | 81 | 77 | 73 | 54 | 81 | 81 | 71 | 60 | 74 | 78 | 69 | 99 | 98 | 38 | 63 | 104 | 75 | 78 | 81 |
| 108 | 66 | 58 | 79 | 61 | 83 | 85 | 93 | 71 | 85 | 66 | 79 | 90 | 94 | 48 | 69 | 78 | 63 | 69 | 79 |
| 68 | 74 | 76 | 73 | 88 | 93 | 66 | 61 | 80 | 84 | 85 | 79 | 72 | 91 | 50 | 67 | 89 | 100 | 85 | 71 |
| 81 | 69 | 101 | 54 | 47 | 111 | 54 | 87 | 82 | 85 | 74 | 88 | 87 | 70 | 64 | 89 | 71 | 78 | 56 | 84 |
| 65 | 82 | 80 | 53 | 59 | 78 | 66 | 51 | 83 | 71 | 45 | 64 | 75 | 74 | 73 | 50 | 100 | 60 | 44 | 58 |
| 69 | 103 | 77 | 93 | 57 | 79 | 117 | 66 | 98 | 48 | 72 | 99 | 67 | 66 | 72 | 86 | 29 | 48 | 87 | 67 |
| 70 | 76 | 115 | 67 | 68 | 71 | 93 | 61 | 61 | 77 | 70 | 86 | 81 | 83 | 75 | 75 | 79 | 87 | 54 | 43 |
| 87 | 91 | 64 | 64 | 73 | 91 | 76 | 87 | 74 | 73 | 88 | 68 | 66 | 72 | 76 | 62 | 38 | 87 | 79 | 79 |
| 90 | 64 | 56 | 95 | 55 | 51 | 77 | 63 | 82 | 81 | 86 | 95 | 78 | 59 | 73 | 90 | 80 | 63 | 59 | 51 |
| 62 | 94 | 81 | 78 | 88 | 78 | 51 | 62 | 85 | 85 | 81 | 87 | 40 | 92 | 57 | 84 | 85 | 56 | 78 | 57 |
| 58 | 85 | 87 | 83 | 80 | 87 | 60 | 69 | 80 | 73 | 80 | 82 | 85 | 84 | 62 | 75 | 98 | 83 | 65 | 83 |
| 67 | 70 | 85 | 63 | 65 | 54 | 57 | 87 | 78 | 92 | 55 | 62 | 83 | 81 | 82 | 80 | 63 | 65 | 37 | 82 |
| 51 | 89 | 88 | 83 | 48 | 70 | 76 | 72 | 82 | 61 | 41 | 74 | 82 | 85 | 89 | 89 | 91 | 77 | 76 | 74 |
| 65 | 99 | 82 | 58 | 45 | 71 | 88 | 59 | 80 | 92 | 69 | 98 | 62 | 78 | 89 | 92 | 66 | 109 | 72 | 79 |
| 76 | 59 | 89 | 89 | 36 | 86 | 80 | 90 | 68 | 82 | 62 | 71 | 65 | 70 | 77 | 80 | 82 | 82 | 55 | 65 |
| 91 | 82 | 55 | 78 | 116 | 73 | 69 | 74 | 80 | 74 | 88 | 107 | 70 | 72 | 71 | 49 | 67 | 65 | 81 | 102 |
| 52 | 69 | 56 | 66 | 83 | 98 | 90 | 61 | 67 | 90 | 85 | 67 | 56 | 87 | 76 | 91 | 69 | 92 | 72 | 80 |
| 61 | 49 | 88 | 57 | 76 | 72 | 100 | 93 | 107 | 79 | 74 | 82 | 72 | 77 | 108 | 65 | 79 | 76 | 90 | 82 |
| 79 | 75 | 68 | 81 | 68 | 69 | 73 | 54 | 79 | 84 | 94 | 69 | 62 | 51 | 92 | 94 | 48 | 60 | 93 | 71 |
| 79 | 87 | 72 | 63 | 86 | 103 | 92 | 77 | 75 | 81 | 86 | 77 | 70 | 54 | 75 | 76 | 62 | 79 | 73 | 87 |
| 82 | 101 | 53 | 82 | 42 | 78 | 75 | 86 | 62 | 82 | 77 | 55 | 52 | 98 | 74 | 61 | 100 | 64 | 83 | 100 |
| 86 | 66 | 79 | 115 | 77 | 69 | 73 | 83 | 74 | 72 | 89 | 47 | 62 | 77 | 45 | 67 | 83 | 76 | 91 | 68 |
| 49 | 86 | 90 | 79 | 78 | 64 | 53 | 80 | 76 | 45 | 74 | 79 | 81 | 73 | 55 | 79 | 50 | 65 | 67 | 71 |
| 51 | 71 | 62 | 88 | 69 | 83 | 87 | 95 | 79 | 86 | 66 | 60 | 62 | 52 | 75 | 88 | 68 | 78 | 85 | 83 |
| 79 | 61 | 65 | 82 | 87 | 68 | 88 | 93 | 83 | 96 | 74 | 64 | 53 | 50 | 83 | 55 | 71 | 76 | 72 | 78 |
| 50 | 76 | 89 | 56 | 54 | 55 | 78 | 92 | 41 | 66 | 108 | 74 | 71 | 69 | 83 | 67 | 62 | 91 | 70 | 86 |
| 89 | 63 | 111 | 108 | 87 | 59 | 78 | 70 | 72 | 31 | 52 | 88 | 83 | 92 | 82 | 64 | 60 | 77 | 72 | 101 |
| 81 | 84 | 59 | 94 | 43 | 52 | 102 | 67 | 77 | 64 | 74 | 93 | 62 | 78 | 92 | 84 | 98 | 76 | 72 | 82 |
| 63 | 60 | 78 | 87 | 69 | 79 | 58 | 61 | 38 | 64 | 93 | 55 | 67 | 97 | 75 | 73 | 46 | 71 | 93 | 80 |
| 69 | 93 | 52 | 53 | 71 | 75 | 76 | 86 | 68 | 86 | 59 | 57 | 80 | 68 | 68 | 61 | 64 | 76 | 80 | 68 |
| 76 | 82 | 70 | 76 | 57 | 74 | 83 | 80 | 86 | 61 | 81 | 85 | 63 | 71 | 87 | 83 | 81 | 71 | 95 | 95 |
| 57 | 62 | 55 | 86 | 77 | 95 | 92 | 94 | 55 | 80 | 84 | 98 | 67 | 59 | 70 | 84 | 66 | 81 | 71 | 57 |
| 62 | 73 | 84 | 120 | 83 | 79 | 90 | 69 | 79 | 85 | 75 | 80 | 91 | 103 | 73 | 77 | 96 | 61 | 60 | 65 |
| 72 | 79 | 67 | 55 | 63 | 79 | 64 | 67 | 109 | 85 | 93 | 94 | 84 | 89 | 108 | 75 | 67 | 68 | 74 | 69 |
| 68 | 84 | 90 | 67 | 71 | 98 | 99 | 94 | 80 | 84 | 83 | 65 | 93 | 50 | 90 | 61 | 82 | 80 | 106 | 95 |
| 82 | 76 | 75 | 79 | 89 | 75 | 88 | 75 | 69 | 69 | 70 | 86 | 53 | 79 | 85 | 96 | 75 | 68 | 90 | 56 |
| 88 | 82 | 79 | 61 | 61 | 63 | 60 | 63 | 104 | 72 | 89 | 81 | 61 | 69 | 67 | 52 | 54 | 97 | 82 | 61 |
| 82 | 70 | 45 | 73 | 67 | 92 | 78 | 79 | 75 | 98 | 68 | 72 | 103 | 89 | 99 | 53 | 66 | 65 | 81 | 77 |
| 47 | 60 | 93 | 101 | 59 | 76 | 55 | 65 | 62 | 64 | 61 | 84 | 92 | 85 | 58 | 75 | 76 | 73 | 95 | 83 |
| 72 | 86 | 66 | 71 | 56 | 75 | 50 | 50 | 80 | 64 | 89 | 76 | 42 | 78 | 68 | 57 | 51 | 53 | 49 | 75 |
| 69 | 79 | 75 | 91 | 88 | 76 | 78 | 97 | 81 | 75 | 86 | 81 | 54 | 81 | 88 | 85 | 66 | 67 | 106 | 56 |
| 51 | 91 | 87 | 89 | 87 | 94 | 59 | 78 | 74 | 79 | 97 | 52 | 60 | 73 | 70 | 82 | 63 | 74 | 90 | 65 |
| 79 | 67 | 55 | 55 | 78 | 46 | 68 | 87 | 52 | 84 | 83 | 67 | 58 | 93 | 82 | 73 | 90 | 57 | 52 | 49 |