

CS1173 Lessons 1-3: Practice sheet

Name: _____

Note: You can always type these expressions into MATLAB to get the values. You should do this to check your answers. However, if you don't try to write these answers by hand first, you will completely negate the value of the review sheet.

1) In the following, assume that the MATLAB variable x is defined by:

$x = [1 \ -2; \ 3 \ 2; \ 0 \ -3; \ 4 \ -1]$; Find the values of each of the following:

a) tabular form of x , showing the direction of dim 1 and dim 2 b) $x(2, 1)$

c) $x(3,2)$

d) $x(:)$

e) $x(:, 1)$

f) $x(2, :)$

g) $\text{sum}(x)$

h) $\text{sum}(x,1)$

i) $\text{sum}(x,2)$

j) $\text{sum}(x(:,2))$

k) $\text{sum}(x([2,3],2))$

l) $\text{sum}(x(:))$

2) More practice. $A = [a, b; c, d; e, f; g, h]$;

a) tabular form of A , showing the direction of dim 1 and dim 2 b) $A(2, 1)$

d) $A(3,2)$

d) $A(:)$

e) $A(:, 1)$

f) $A(2, :)$

g) $\text{sum}(A)$

h) $\text{sum}(A,1)$

i) $\text{sum}(A,2)$

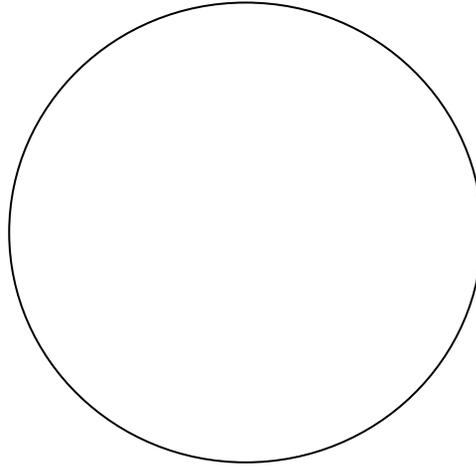
j) $\text{sum}(A(:,2))$

k) $\text{sum}(x([2,3],2))$

l) $\text{sum}(x(:))$

Day	Beach 1 count	Beach 2 count
1	80	20
5	30	50
6	10	20
8	20	40
10	50	30
15	10	20
20	40	10

Draw a pie chart showing the percentage of total bacteria that came from each beach. Be sure to label the chart appropriately.

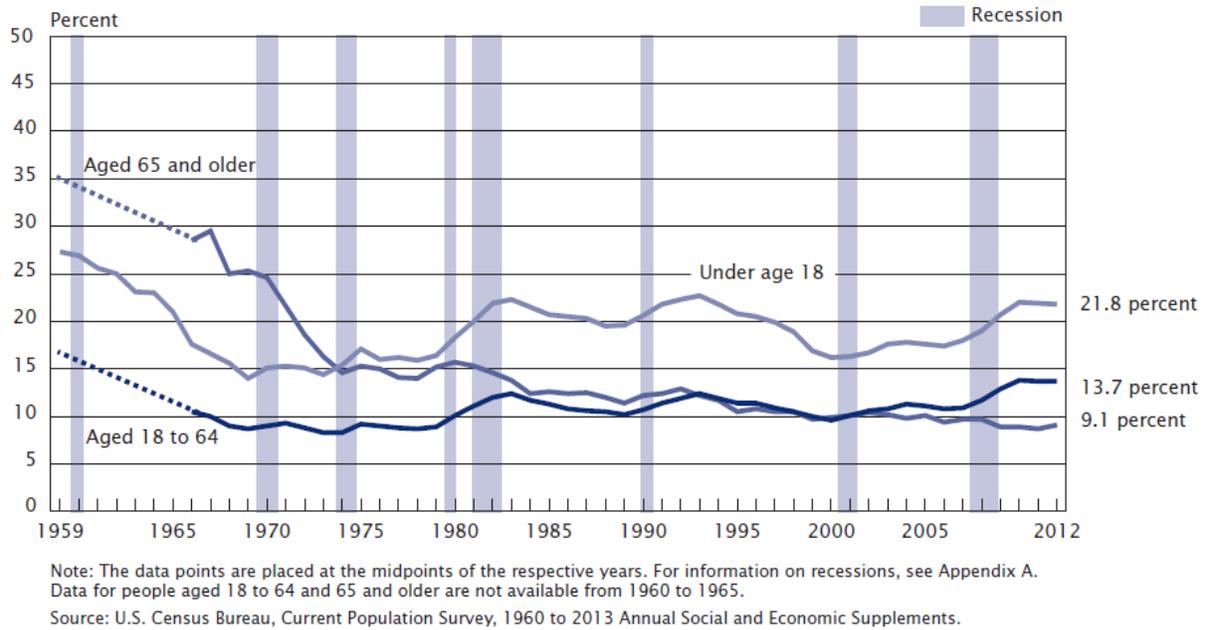


Draw a bar stacked chart of the daily counts at the two beaches versus day. Be sure to include appropriate labels, ticks and title.



The following more professional graph from the US Census summarizes US poverty rates by age. You can find the full report: <https://www.census.gov/hhes/www/poverty/data/incpovhlth/2012/>.

Poverty Rates by Age: 1959 to 2012



Answer the following questions.

Note: You can find a color version of this figure at:

<https://www.census.gov/hhes/www/poverty/data/incpovhlth/2012/figure5.pdf>.

Provide a detailed quantitative observation about poverty levels of US adults aged 18 to 64 from this graph.

Make a detailed quantitative observation about how the latest recession affected poverty levels of the different age groups. Come up with at least one explanation of why this might be the case.

Describe the trends (i.e., increasing, decreasing) in poverty levels of senior citizens for the period 1959 to 2012. Give a possible explanation of these trends.