

Student: _____

Instructor: Megan Rourke

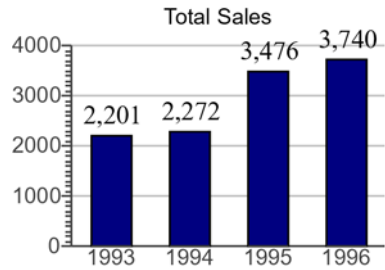
Assignment: Statistics

Date: _____

Course: MATH 1500 - Online

1.

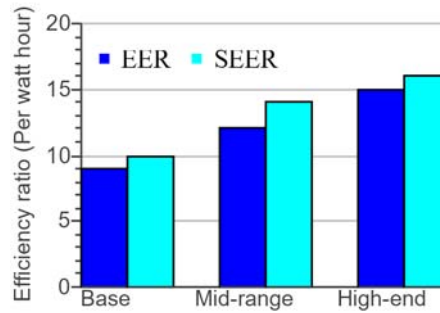
Use this graph to answer the questions below.



- During which year did the largest increase in sales occur?
- Determine the total sales for the year 1994.
- How many more sales were there in 1995 than in 1994?
- By what percent did sales increase from 1994 to 1996?

- The largest increase in sales occurred in the year .
- The total sales for 1994 were \$.
- Sales in 1995 were \$ more than in 1994.
- There was about % of increase in sales from 1994 to 1996.
(Round to the nearest hundredth as needed.)

2. The following double-bar graph represents the energy efficiency ratio (EER) and seasonal energy efficiency ratio (SEER) for different models of residential air conditioners.



- What is the approximate EER for the base model?
- Which model has a SEER of about 14?
- Calculate the percent increase in SEER from the base model to the high-end model.
- Calculate the percent increase in the EER from the base model to the mid-range model.

a. The approximate EER for the base model is units per watt-hour.

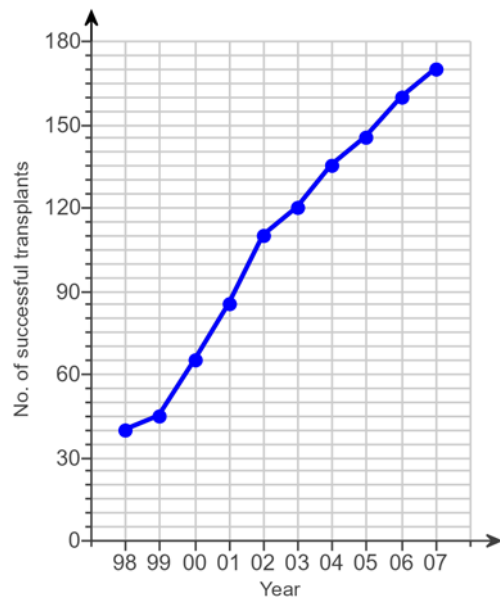
b. The (1) model has a SEER of about 14.

c. The increase in SEER from the base model to the high-end model is about %.
(Round to the nearest hundredth as needed.)

d. The increase in the EER from the base model to the mid-range model is about %.
(Round to the nearest hundredth as needed.)

- (1) ☐ mid-range
☐ high-end
☐ base

3. The number of successful bone marrow transplants performed at the hospital from 1998 – 2007 is illustrated in the following broken-line graph.



- a. Approximately how many successful bone marrow transplants were performed in 1998?

There were approximately successful bone marrow transplants performed in 1998.

- b. Approximately how many successful bone marrow transplants were performed in 2007?

There were approximately successful bone marrow transplants performed successfully in 2007.

- c. By about what percent did the number of successful bone marrow transplants increase in the five-year period from 2002 – 2007?

The number of successful bone marrow transplants was increased by

% in the five-year period from 2002 – 2007.

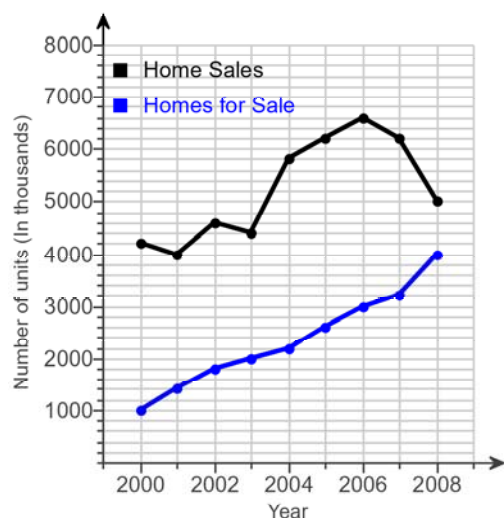
(Round to the nearest whole number as needed.)

- d. If the bone marrow transplant program increases at the same rate over the next five years, how many successful bone marrow transplants can the hospital expect to perform in 2012?

The hospital can expect to perform bone marrow transplants in 2012.

(Round to the nearest whole number as needed.)

4. The following double-bar graph compares the number of actual home sales to the number of homes for sale from 2000 – 2008. Study the graph and answer the questions that follow.



- a. In what year did the biggest drop in home sales occur? By approximately how many units did sales drop?

☐ A. 2008; approximately 5,000,000
☐ B. 2008; approximately 1,200,000
☐ C. 2007; approximately 5,000,000
☐ D. 2007; approximately 1,200,000

- b. Identify at least two years when the number of sales and the number of homes for sale both increased.

☐ A. 2002, 2005
☐ B. 2001, 2003
☐ C. 2002, 2008
☐ D. 2001, 2002

- c. In what year were home sales at their lowest level? In what year were home sales at their highest level?

☐ A. lowest: 2001; highest: 2007
☐ B. lowest: 2001; highest: 2006
☐ C. lowest: 2002; highest: 2006
☐ D. lowest: 2002; highest: 2008

- d. Based on your answer to part (c), how many more units were sold in the highest-selling year than the lowest-selling year?

☐ A. Approximately 6,200,000
☐ B. Approximately 6,600,000
☐ C. Approximately 4,000,000
☐ D. Approximately 2,600,000

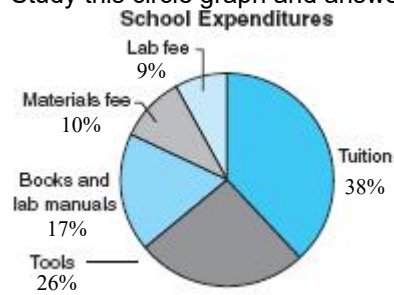
- e. By approximately what percent did the number of homes for sale increase between 2004 and 2008?

The increase in the number of homes for sale between 2004 and 2008 was about %.

(Round to the nearest whole number as needed.)

5.

Study this circle graph and answer the questions that follow.



- Which category represents the largest expenditure?
- Which category represents the smallest expenditure?
- If a student spent a total of \$2600, how much of this went toward tools and lab fees combined?
- If a student spent \$300 on materials, how much would she spend on books and lab manuals?

a. Which category represents the largest expenditure? Choose the correct answer below.

- ☐ Tools
- ☐ Materials fee
- ☐ Tuition
- ☐ Books and lab manuals
- ☐ Lab fee

b. Which category represents the smallest expenditure?

- ☐ Tuition
- ☐ Books and lab manuals
- ☐ Materials fee
- ☐ Tools
- ☐ Lab fee

c. The student spent a total of \$2600 so the combined amount that went towards tools and lab fees was \$.

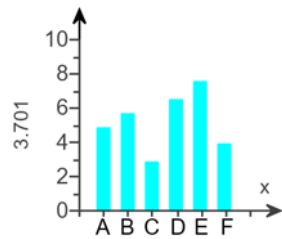
d. If a student spent \$300 on materials, the amount spent on books and lab manuals was \$.

6. The table shows the average cost of a gallon of regular gas in various countries during the summer. Construct a bar graph of these data.

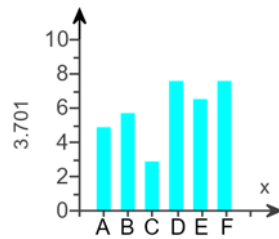
Country	Price per Gallon of Regular Gasoline
A	\$5.09
B	\$4.00
C	\$2.71
D	\$6.46
E	\$7.60
F	\$3.70

Choose the correct graph below.

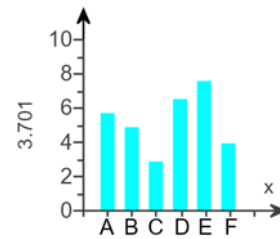
☐ A.



☐ B.



☐ C.

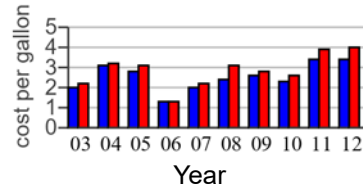
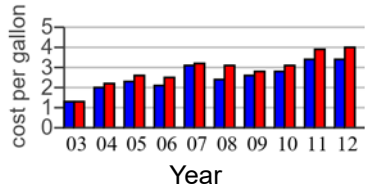


7. The following table shows the average prices per gallon of both regular gasoline and diesel fuel from 2003 through 2012. Construct a double-bar graph illustrating these prices.

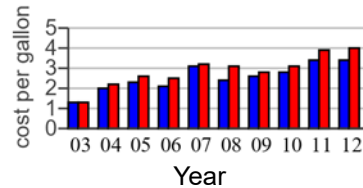
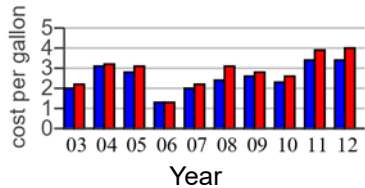
Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cost of Regular Gasoline	\$1.29	\$1.98	\$2.35	\$2.13	\$3.06	\$2.45	\$2.65	\$2.76	\$3.37	\$3.45
Cost of Diesel Fuel	\$1.28	\$2.22	\$2.60	\$2.51	\$3.20	\$3.07	\$2.82	\$3.06	\$3.88	\$4.02

Choose the correct graph below.

- ☐ A. ■ Cost of Diesel Fuel ■ Cost of Regular Gasoline ☐ B. ■ Cost of Diesel Fuel ■ Cost of Regular Gasoline



- ☐ C. ■ Cost of Regular Gasoline ■ Cost of Diesel Fuel ☐ D. ■ Cost of Regular Gasoline ■ Cost of Diesel Fuel



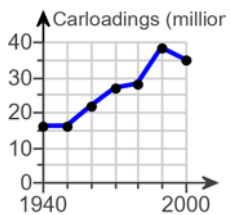
8. Railroad freight. Graph the data in the following table using a broken-line graph.

Annual Railroad Carloadings in Country X

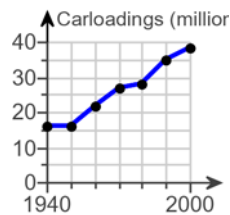
Year	1940	1950	1960	1970	1980	1990	2000
Carloadings (millions)	35	38.5	28	27	22	16	16

Which graph is representative of the above data?

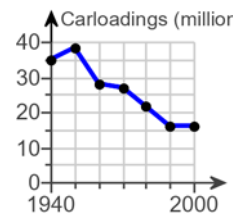
- ☐ A.



- ☐ B.

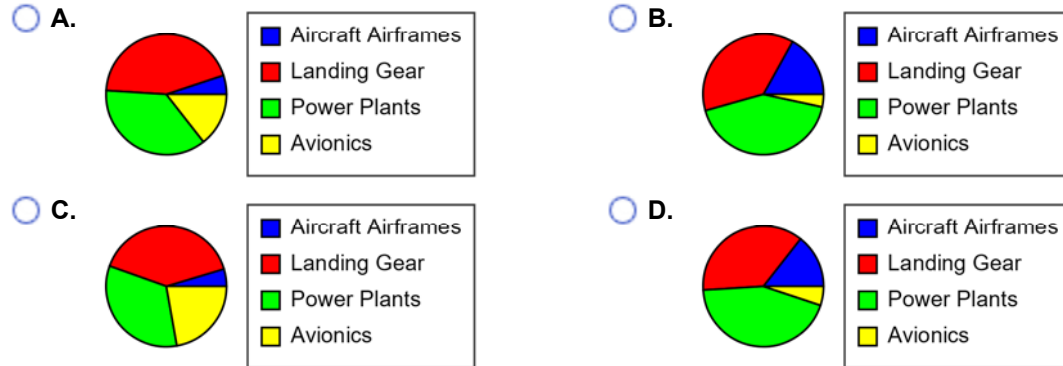


- ☐ C.



9. An aircraft mechanic spends 14.4% of a 40-hr week working on aircraft airframes, 36.6% of the week on landing gear, 43.9% of the week working on power plants and 5.1% of the week on avionics. Plot a circle graph using this information.

Choose the circle graph below that correctly represents the data in the table.



10. Find the mean, median, and mode of the set of numbers.

9, 2, 2, 8, 7, 6, 1, 9, 2, 7

What is the mean?

(Type an integer or a decimal.)

What is the median?

(Type an integer or a decimal.)

What is the mode? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ☐ A. _____
- ☐ B. There is no mode for the set of data

11. Find the mean, median, and mode of the set of numbers.

125, 165, 148, 133, 185, 166, 105, 195

What is the mean?

(Type an integer or decimal rounded to one decimal place as needed.)

What is the median?

(Type an integer or a decimal.)

What is the mode? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ☐ A. _____
- ☐ B. There is no mode.

12. Construct an extended frequency distribution for the set of numbers and calculate the mean of the grouped data. Use intervals of 0.09 beginning at 1.00.

1.43 1.13 1.44 1.04 1.23 1.46 1.28 1.30 1.35 1.22
1.29 1.40 1.28 1.09 1.47 1.38 1.24 1.22 1.13 1.07

Fill in the frequency distribution below.

Class Intervals	Frequency, F
1.00 – 1.09	<input type="text"/>
1.10 – 1.19	<input type="text"/>
1.20 – 1.29	<input type="text"/>
1.30 – 1.39	<input type="text"/>
1.40 – 1.49	<input type="text"/>

The mean of the grouped data is .

(Type an integer or decimal rounded to three decimal places as needed.)

13.

A company produces brake pads for commercial airliners. Two production teams are working to produce 15-lb brake pads over a six-month period. Team A works on one furnace deck, while production team B works on a second furnace deck. A 15-lb carbon brake pad costs \$1000 per pad to produce. Use the information in the table to answer the questions to the right.

Month	Team A (brake pads)	Team B (brake pads)
January	37,059	40,884
February	34,843	41,123
March	35,172	39,146
April	38,413	35,750
May	39,911	32,500
June	36,875	33,250

a. Calculate the mean monthly production for team A.

 brake pads

(Round to the nearest whole number as needed.)

b. Calculate the mean monthly production for team B.

 brake pads

(Round to the nearest whole number as needed.)

c. Find the median monthly production for team A.

 brake pads

(Type a whole number.)

d. Find the median monthly production for team B.

 brake pads

(Type a whole number.)

e. Calculate the average cost per month for the two teams combined.

\$

(Round to the nearest whole number as needed.)

14. The following table shows both the total number of wildfires and the total number of acres burned by wildfires annually from 2005 through 2010. Complete parts (a) to (f).

Year	Number of Wildfires	Total Acres Burned
2005	66,476	8,698,751
2006	96,634	9,837,035
2007	85,583	9,240,551
2008	78,749	5,251,913
2009	78,016	5,914,600
2010	74,072	8,744,121

- (a) Find the mean number of annual wildfires.

(Round to the nearest whole number as needed.)

- (b) Find the median number of annual wildfires.

(Round to the nearest whole number as needed.)

- (c) Find the mean number of acres burned.

(Round to the nearest whole number as needed.)

- (d) Use answers to parts (a) and (c) to find the average number of acres burned per wildfire.

(Round to the nearest whole number as needed.)

- (e) By what percent did the number of wildfires in 2006 exceed the median number for the time period shown?

% (Round to the nearest whole number as needed.)

- (f) By what percent was the number of acres burned in 2008 below the mean for the time period shown?

% (Round to the nearest whole number as needed.)

15. The following table shows the monthly flow through a dam from October through April.

Month	Volume (in Thousand Acre Feet, kAF)
October	91
November	134
December	235
January	726
February	346
March	496
April	1033

- a. Calculate the mean monthly water flow.
 b. Find the median monthly water flow.
 c. By what percent did the flow in March exceed the mean flow?

a. Mean monthly water flow = kAF
 (Type an integer or decimal rounded to one decimal place as needed.)

b. Median monthly water flow = kAF
 (Type an integer or a decimal.)

c. The flow in March exceeds the mean flow by %.
 (Type an integer or decimal rounded to one decimal place as needed.)

16. The Apgar score is widely used to assess the general health of infants shortly after birth. Scores range from 0 (very poor) to 10 (perfect). To evaluate the success of a new maternal health program, a hospital compared the Apgar scores of 10 infants whose mothers participated in the health program (P = participant) with the scores of 10 infants whose mothers did not participate (NP = nonparticipant). The infants' scores for the two groups are shown in the following table.

P:	7	8	7	10	7	9	8	2	8	10
NP:	8	10	3	6	5	8	6	5	9	6

- a. Calculate the mean and median of the Apgar scores for the infants whose mothers participated in the program.

The mean of the Apgar scores for the infants whose mothers participated is .
 (Type an integer or a decimal.)

The median of the Apgar scores for the infants whose mothers participated is .
 (Type an integer or a decimal.)

- b. Calculate the mean and median of the Apgar scores for the infants whose mothers did not participate in the program.

The mean of the Apgar scores for the infants whose mothers did not participate is .
 (Type an integer or a decimal.)

The median of the Apgar scores for the infants whose mothers did not participate is .
 (Type an integer or a decimal.)

17. To best determine the fuel economy of a car, an automotive technician calculates the mean gas mileage computed for 10 full tanks of gas.

a. Use intervals of 0.9 beginning at 19.0 to compute the mean fuel economy (in miles per gallon) from the following data.

21.7 19.5 20.6 20.7 19.3 21.7 22.2 20.1 19.9 21.8

b. At \$4.00 per gallon, use the mean fuel economy to calculate the average cost per mile to operate this vehicle.

a. The mean fuel economy is mi/gal.

(Type an integer or a decimal.)

b. The average cost per mile is \$.

(Round to the nearest cent as needed.)

1. 1995
2,272
1,204
64.61
-

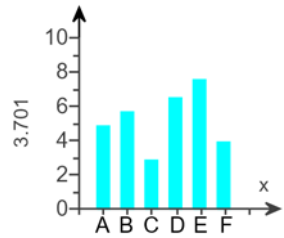
2. 9
(1) mid-range
60
33.33
-

3. 40
170
55
264
-

4. B. 2008; approximately 1,200,000
A. 2002, 2005
B. lowest: 2001; highest: 2006
D. Approximately 2,600,000
82
-

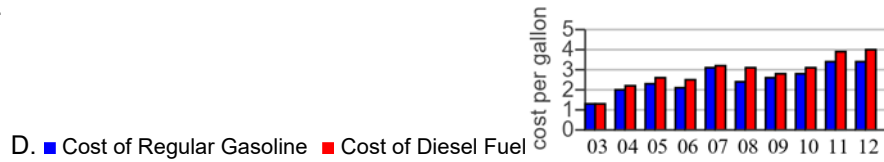
5. Tuition
Lab fee
910
510
-

6.



A.

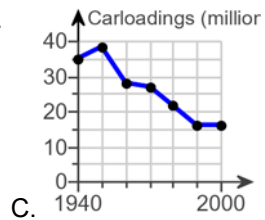
7.



D. ■ Cost of Regular Gasoline ■ Cost of Diesel Fuel

Year

8.



C.

9.



D.

10. 5.3

6.5

A.

11. 152.8

156.5

B. There is no mode.

12. 3

2

7

3

5

1.270

13. 37,046

37,109

36,967

37,448

74,154,333

14. 79,922

78,383

7,947,829

99

23

34

15. 437.3

346

13.4

16. 7.6

8

6.6

6

17. 20.65

0.19
