SOL Warm-Up

Graphing Calculator Active

A.4a Using matrices to organize and manipulate data

1. What is the sum of the following matrices? $\begin{bmatrix} 3 & -2 \\ -4 & 1 \end{bmatrix} + \begin{bmatrix} -2 & 4 \\ 0 & -5 \end{bmatrix}$

A $\begin{bmatrix} -1 & -2 \\ -4 & 4 \end{bmatrix}$ **B** $\begin{bmatrix} 1 & 2 \\ -4 & -4 \end{bmatrix}$ **C** $\begin{bmatrix} -1 & -2 \\ -4 & -4 \end{bmatrix}$ **D** $\begin{bmatrix} -1 & 2 \\ -4 & -4 \end{bmatrix}$

2. What is the difference of the following matrices? $\begin{bmatrix} 2 & -5 \\ -3 & 6 \end{bmatrix} - \begin{bmatrix} -4 & -3 \\ 5 & 0 \end{bmatrix}$

A $\begin{bmatrix} -2 & -2 \\ 2 & 6 \end{bmatrix}$ **B** $\begin{bmatrix} 6 & -2 \\ -8 & 6 \end{bmatrix}$ **C** $\begin{bmatrix} 6 & -2 \\ -2 & 6 \end{bmatrix}$ **D** $\begin{bmatrix} -2 & 2 \\ -8 & 0 \end{bmatrix}$

3. What is the scalar product? $2\begin{bmatrix} -3 & 1.25 \\ 0 & 2.5 \end{bmatrix}$

A $\begin{bmatrix} -6 & 2.5 \\ 0 & 5 \end{bmatrix}$ **B** $\begin{bmatrix} 6 & 25 \\ 0 & 5 \end{bmatrix}$ **C** $\begin{bmatrix} -6 & 2.5 \\ 9 & 50 \end{bmatrix}$ **D** $\begin{bmatrix} 6 & 2.5 \\ 0 & 5 \end{bmatrix}$

4. Which matrix best represents how many fans for each league said they would ban the designated hitter rule?

	Fans	
	NL	**AL**
ban rule	72%	24%
exp*and rule*	20%	53%
leave as is	8%	23%

A $\begin{bmatrix} 72 & 24 \end{bmatrix}$ **B** $\begin{bmatrix} 38 & 100.7 \end{bmatrix}$ **C** $\begin{bmatrix} 136.8 & 45.6 \end{bmatrix}$ **D** $\begin{bmatrix} 20 & 53 \end{bmatrix}$

SOL Warm-Up

Graphing Calculator Active

A.4b Using matrices to organize and manipulate data

1. What is the sum of the following matrices? $\begin{bmatrix} 3 & -2 \\ -4 & 1 \end{bmatrix} + \begin{bmatrix} -2 & -2 \\ 0 & -5 \end{bmatrix}$

A $\begin{bmatrix} -1 & 0 \\ -4 & 4 \end{bmatrix}$ **B** $\begin{bmatrix} 1 & 4 \\ -4 & -4 \end{bmatrix}$ **C** $\begin{bmatrix} -1 & -4 \\ -4 & -4 \end{bmatrix}$ **D** $\begin{bmatrix} -1 & 4 \\ -4 & -4 \end{bmatrix}$

2. What is the scalar product? $2.1\begin{bmatrix} -3 & 1.25 \\ 0 & 2.5 \end{bmatrix}$

A $\begin{bmatrix} -6.3 & 2.625 \\ 0 & 5.25 \end{bmatrix}$ **B** $\begin{bmatrix} 6.3 & 26.25 \\ 0 & 5.25 \end{bmatrix}$ **C** $\begin{bmatrix} -6.3 & 2.625 \\ 0 & 52.5 \end{bmatrix}$ **D** $\begin{bmatrix} 6.3 & 2.625 \\ 0 & 5.25 \end{bmatrix}$

SOL Warm-Up
Graphing Calculator Active

A.16a Writing equation for a line of best fit

1. What is the equation of the line of best fit that best models the data in the table?

x	6	5	4	3	2	1	0	-1	-2
y	11	10	12	10	2	0	-1	-1	-2

A $y = 2x + 0.5$
B $y = 2x$
C $y = 0.5x + 2$
D $y = 2x - 0.5$

2. Data gathered on used 4-runners shows how the number of miles driven affects the selling price. Which equation best models the line of best fit for the data, where x is the number of miles in thousands and y is the selling price in thousands?

miles driven	**selling price**
23,000	29,000
25,000	27,000
26,000	25,000
33,000	21,000
34,000	21,000
35,000	20,000
43,000	18,000
45,000	17,000
64,000	12,000

A $y = -0.4x + 35.5$
B $y = 35.5x - 0.4$
C $y = -2.3x + 85.5$
D $y = -0.4x + 35466$

SOL Warm-Up
Graphing Calculator Active

A.16b Writing equation for a line of best fit

1. Which is the equation of the line of best fit that best models the data in the table?

x	6	8	9	16	17	18	26	28	37
y	29	27	25	21	21	20	18	17	12

A y = -5x + 30
B y =0.5x + 30.3
C y = -5x + 30.3
D y = 30x - 0.5

2. What is the equation of the line of best fit that best models the data in the table?

x	15	19	21	35	37	39	55	59	97
y	24	22	20	14	15	16	13	2	7

A y = -0.2x - 24
B y = 0.2x + 24
C y = 24x -0.2
D y = -0.2x + 24

3. You want to carpet your room and you collect data on different sales to find the best price. Which equation best models the data you found if x is the number square feet of carpet you need and and y is the selling price?

square feet	**selling price**
100	956
120	1207
125	1190
130	1238
140	1428
150	1375
160	1523
175	1903
200	2020

A y = 11x +165
B y = 11x - 165
C y = -11x + 165
D y = 165x - 11

SOL Warm-Up
Graphing Calculator Active

A.17a Finding measures of central tendency and range of a set of data

1. What is the median of the following set of data?
   12, 17, 17, 19, 20, 21, 21, 24, 29

A 17
B 19
C 20
D 21

2. What is the mean of the following set of data?
   300, 35, 40, 50, 60

A 93
B 97
C 98
D 100

3. A magazine ad shows 5 video cameras on sale for $499, $895, $679, $1195, and $1400. What is the mean price of the video cameras?

A $923.60
B $933.60
C $943.60
D $1014.60

4. What is the range for the following set of data?
   25, 32, 18, 27, 39, 20, 42, 23, and 35

A 24
B 26
C 27
D 29

SOL Warm-Up
Graphing Calculator Active

A.17b Finding measures of central tendency

15 shoppers at a grocery store spent the following amounts:

$12.75 $21.95 $98.54 $63.26 $62.47

$39.62 $79.67 $170.62 $121.27 $15.43

$17.14 $186.51 $139.20 $74.18 $119.45

1. What is the mean of the data above?

A $76.76
B $81.47
C $83.95
D $99.51

2. What is the median of the data above?

A $63.26
B $74.18
C $79.67
D $119.45

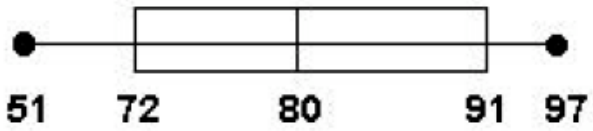
3. What is the range of the data above?

A $121.27
B $170.62
C $173.76
D $186.51

SOL Warm-Up
Graphing Calculator Active

A.17c Finding measures of central tendency

The box-and-whisker plot to the right represents standardized test scores for 280 ninth grade students.



1. 50% of the students scored above what number?

A 51
B 72
C 80
D 91

2. 50% of the students scored between what two numbers?

A 51 and 91
B 51 and 97
C 72 and 91
D 72 and 97

3. What is the interquartile range of the scores?

A 6
B 17
C 19
D 46

4. 25% of the students scored below what number?

A 51
B 72
C 80
D 91

5. What percent of the students scored above 91?

A 1
B 27
C 70
D 97

SOL Warm-Up
Graphing Calculator Active

A.17d Analyzing data

Below are percentages of all doctorates earned by men and women between 1980 and 1989:

College	Women	Men
Boudoin	45	48
Carleton	38	61
Grinnell	34	47
Middlebury	36	46
Oberlin	20	34
Swarthmore	34	46

1. What is the difference between the means of the percentages of doctorates earned by women and men?

A 11.5
B 12
C 12.5
D 14

2. What is the difference in the ranges of the percentages of doctorates earned by men and women?

A 1
B 2
C 3
D 4

3. How much higher is the median of the percentage of doctorates earned by men than the percentage earned by women?

A 10.5
B 11.0
C 11.5
D 12.0

4. If the Oberlin data is omitted, what is the difference between the means of the percentages of doctorates earned by women and men?

A 11.0
B 11.5
C 12
D 12.2

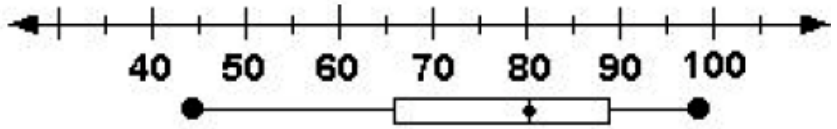
SOL Warm-Up
Graphing Calculator Active

A.17e Using stem-and-leaf and box-and-whisker plots to compare and analyze data

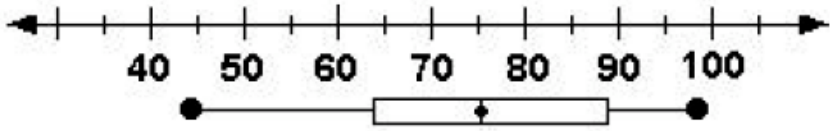
1. Which of the following box-and-whisker plots best represents the data in the stem-and-leaf plot?

4	4 4 9	6 | 2 means 62
5	4 5	
6	2 2 4 5 9	
7	1 4 5 6 7 8 9	
8	0 2 4 5 6 7 8 9 9 9	
9	0 2 3 3 5 6 8 9	

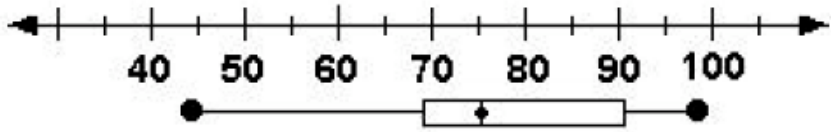
A



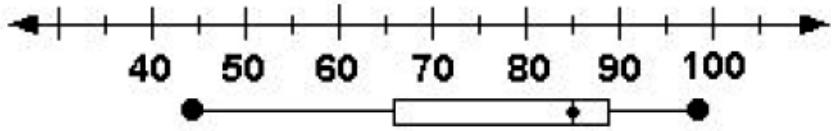
B



C

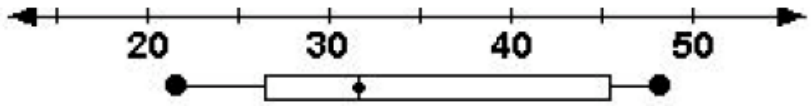


D

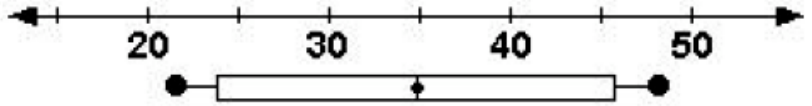


2. Which of the following box-and-whisker plots best represents the following data? 21, 23, 27, 27, 31, 35, 42, 43, 46, 46, 48

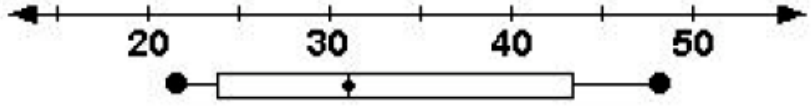
A



B



C



D