

Problem 1

The Spring Thing
Team Member Names:

Date:
Period:

1.1

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |

1.2

Click to add variable

No lists in this problem

Click to add variable

1.3

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

1.4

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

1.5

Given this experimental setup, what would be the limits on the domain and range?

1.6

What is the domain and range of the function?

1.7

What would this function predict in the other three quadrants? Is this realistic?

1.8

What are the magnitudes and the units for the slope:

y-intercept:

x-intercept:

area under the curve:

1.9

Problem 2

The Spring Thing
 Team Member
 Names: Staisha, Shannon, Gwyn

 Date: 12/5/12
 Period: 5th!!

2.1

© Rewrite your function as an inverse and see if it matches any better with the class.

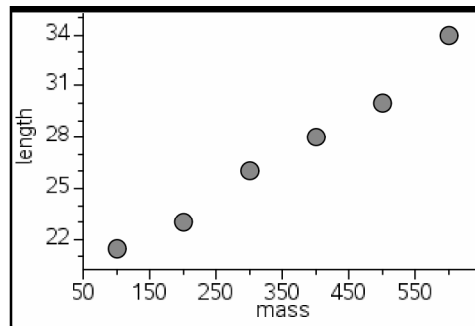
1.10

$\sqrt{x^2} = \sqrt{0.03}$ $|x| = 0.173205$
 $\sqrt{x^2} = \sqrt{0.03}$ $|x| = 0.173205$
 $0.17 \cdot \text{grams}^2$ $0.17 \cdot \text{grams}^2$

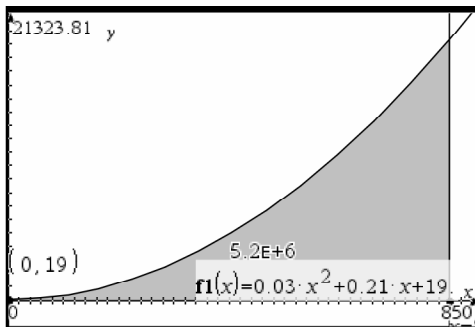
2.2

| | A mass | B length | C | D |
|---|--------|----------|---|---|
| 1 | 0 | - | | |
| 2 | 100 | 21.5 | | |
| 3 | 200 | 23 | | |
| 4 | 300 | 26 | | |
| 5 | 400 | 28 | | |
| 6 | 500 | 30 | | |

2.3



2.4



2.5

completeSquare(stat.freqreg)

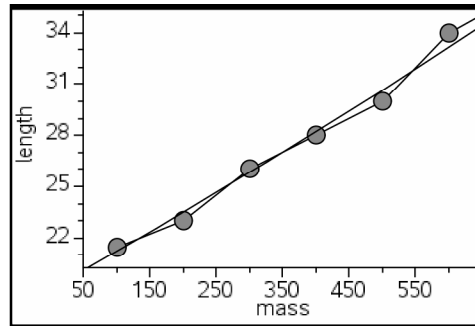
2.6

```

stat.FreqReg      { _1.,1.,1.,1.,1.,1.,1. }
stat.RegEqn(x)
0.000003 · x2+0.021616 · x+19.0103

```

2.7



2.8

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

The more weight you add to the spring the more it stretches

2.9

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

it is, no it wouldn't

2.10

Given this experimental setup, what would be the limits on the domain and range?

It would be when the weights get too heavy.

2.11

What is the domain and range of the function?

Weight and height

2.12

What would this function predict in the other three quadrants? Is this realistic?

That it would mass and length

2.13

What are the magnitudes and the units for the slope:

y-intercept:
19

x-intercept:
none

area under the curve:

2.14

© Rewrite your function as an inverse and see if it matches any better with the class.

1/99

2.15

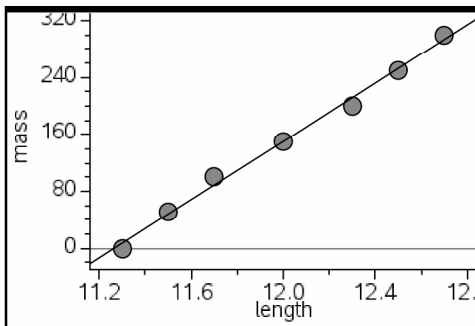
Problem 3

The Spring Thing
 Team Member Names: haylee mathews,
 isabel cardona,moses lechtenberger
 Date:12/5/12
 Period:5

| | A | B | C | D |
|---|------|--------|---|---|
| | mass | length | | |
| 1 | 0 | 11.3 | | |
| 2 | 50 | 11.5 | | |
| 3 | 100 | 11.7 | | |
| 4 | 150 | 12 | | |
| 5 | 200 | 12.3 | | |
| 6 | 250 | 12.5 | | |

3.1

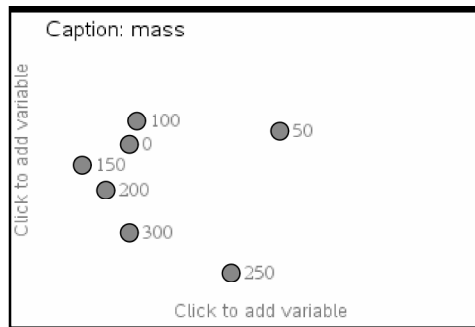
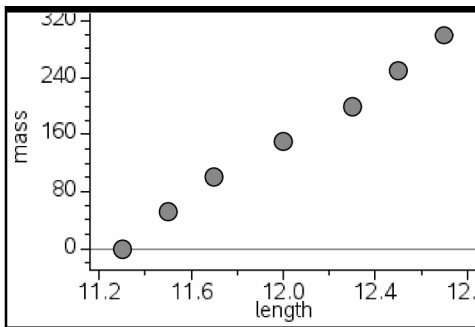
3.2



the spring stretches in a linear pattern.

3.3

3.4



3.5

3.6

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves. slide 1.4

3.7

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled? the spring would stretch more

3.8

Given this experimental setup, what would be the limits on the domain and range? the length of the spring and the mass of the weight

3.9

What is the domain and range of the function? domain is all real numbers and range is mass

3.10

What would this function predict in the other three quadrants? Is this realistic? it would not be realistic because there cannot be negative weight

3.11

What are the magnitudes and the units for the slope: 11.4
y-intercept: mass
x-intercept: length
area under the curve:

3.12

© Rewrite your function as an inverse and see if it matches any better with the class.

1/99

3.13

Problem 4

The Spring Thing

Team Member Names: michael lewis +
conner zamora and mario beia

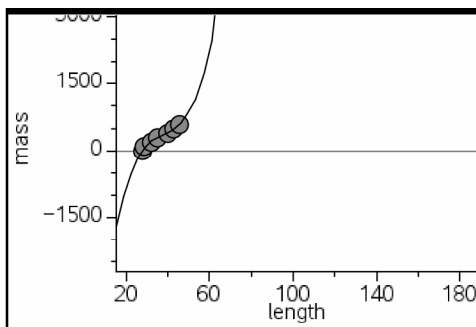
Date: 12-5-12

Period: 5th

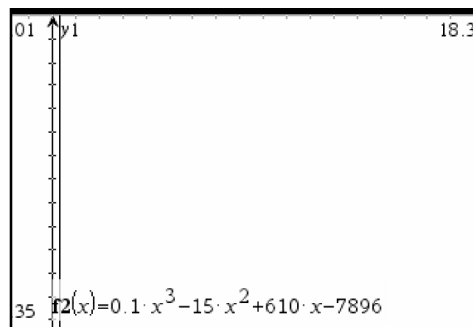
4.1

| | A | B | C | D |
|---|------|--------|---|---|
| | mass | length | | |
| 1 | ≠ | 28 | | |
| 2 | 100 | 29 | | |
| 3 | 200 | 32 | | |
| 4 | 300 | 35 | | |
| 5 | 400 | 40 | | |
| 6 | 500 | 42 | | |

4.2



4.3



4.4

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

When more mass is added to the spring, the length of the spring increases.

4.5

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

Function: $f(x) = .1x^3 - 15x^2 + 610x - 7896$

No, it would not be realistic because the correlation between the mass and length of string is not constant

4.6

Given this experimental setup, what would be the limits on the domain and range?

The height of the mount and the amount of weight the spring can bear.

4.7

What is the domain and range of the function?

Domain: Length of spring (x)

Range: Mass (y)

4.8

What would this function predict in the other three quadrants? Is this realistic?

Quadrant 2: no data

Quadrant 3: as $-x$ increases $-y$ also does

Quadrant 4: as $-x$ increases $-y$ also does

4.9

What are the magnitudes and the units for the slope: (28.4,380)

y-intercept: (0,7900)

x-intercept: (0,7896)

area under the curve: (4,-476)

4.10

© Rewrite your function as an inverse and see if it matches any better with the class.

$$y = -.1x^3 + 15x^2 - 610x + 7896$$

1/99

4.11

Problem 5

The Spring Thing

Team Member Names: Sara Koch, Lucy Hollingshead, Morgan Moody

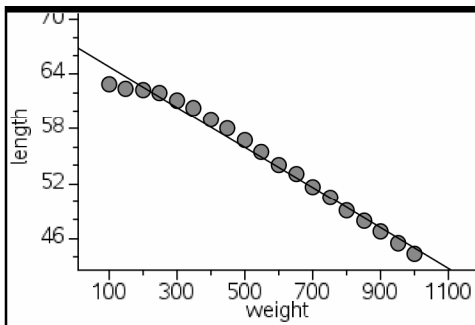
Date: 12-5-12

Period: 5

5.1

| A | B | C | D |
|--------|--------|--|-----------|
| weight | length | first | second |
| | | =delta(list(length)=delta(list(first)) | |
| 1 | 100 | 63 | -0.5 0.3 |
| 2 | 150 | 62.5 | -0.2 -0.1 |
| 3 | 200 | 62.3 | -0.3 -0.5 |
| 4 | 250 | 62 | -0.8 -0.1 |
| 5 | 300 | 61.2 | -0.9 -0.4 |
| 6 | 350 | 60.2 | -1.2 -0.2 |
| A1 | 100 | | |

5.2

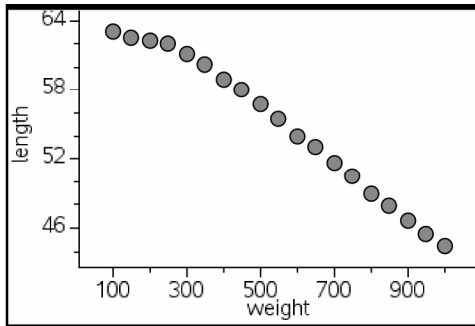


5.3

stat. r² 0.985286

1/99

5.4



5.5

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

The more weight added to the spring the longer the springs length is.

5.6

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

Its not realistic because the spring would stretch too much and not work. The length would be way too long.

5.7

Given this experimental setup, what would be the limits on the domain and range?

Domain= 0-1000

Range= 0-44.4

5.8

What is the domain and range of the function?

Domain= 0-1000

Range= 0-44.4

5.9

What would this function predict in the other three quadrants? Is this realistic?

It'd be the opposite as it is now, its not realistic because you cant have negative mass and length.

5.10

What are the magnitudes and the units for the slope:

.022 cm/gm

y-intercept: 65.5

x-intercept: 1100

area under the curve: 36025

5.11

© Rewrite your function as an inverse and see if it matches any better with the class.

$x = -67y + .022$

1/99

5.12

Problem 6

The Spring Thing

Team Member Names: reece fitchue, parker davis, Kris Meek

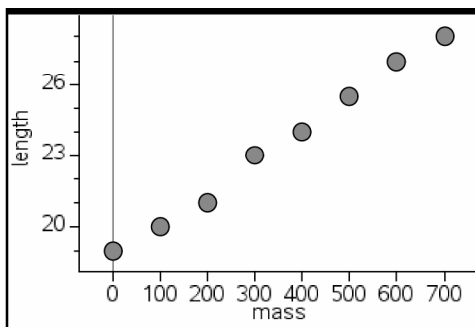
Date: 12/05/12

Period: 5th

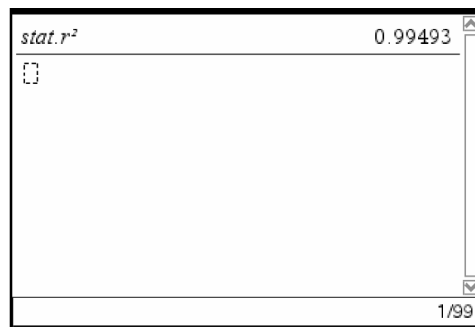
6.1

| | A | B | C | D |
|----|------|--------|---|---|
| | mass | length | | |
| 1 | 0 | 19 | | |
| 2 | 100 | 20 | | |
| 3 | 200 | 21 | | |
| 4 | 300 | 23 | | |
| 5 | 400 | 24 | | |
| 6 | 500 | 25.5 | | |
| A1 | 0 | | | |

6.2



6.3



6.4

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

the more mass on the spring the further it stretches

6.5

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

its realistic

6.6

Given this experimental setup, what would be the limits on the domain and range?

1000grams on spring

35in on spring stretch

6.7

What is the domain and range of the function?

range=4.66

domain=

6.8

What would this function predict in the other three quadrants? Is this realistic?

realistic results and it will go through quadrant 3 also

6.9

What are the magnitudes and the units for the slope: $k = \theta$

y-intercept:

x-intercept:

area under the curve:

6.10

© Rewrite your function as an inverse and see if it matches any better with the class.

1/99

6.11

Problem 7

The Spring Thing

Team Member Names: Mario, Davis, fernando

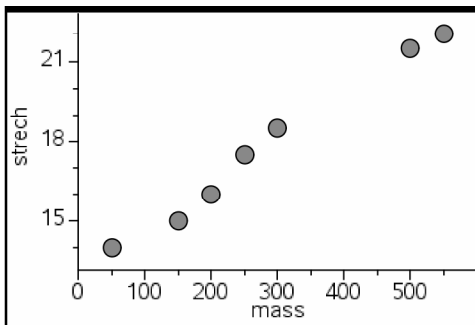
Date: 12-5-12

Period: 5th

7.1

| A | B | C | D |
|---|------|--------|---|
| | mass | strech | |
| 1 | 50 | 14 | |
| 2 | 150 | 15 | |
| 3 | 200 | 16 | |
| 4 | 250 | 17.5 | |
| 5 | 300 | 18.5 | |
| 6 | 500 | 21.5 | |

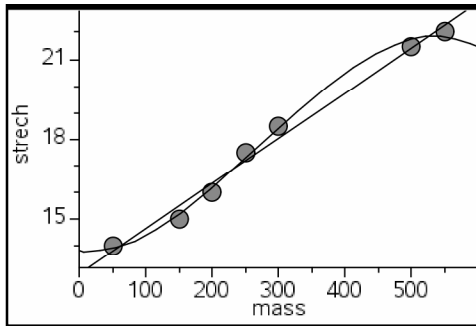
7.2



7.3

Press menu

7.4



7.5

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves. when you add more mass or weight the length of spring or how far it stretches increases.

7.6

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled? if you double our dependent or independent variable it would be unrealistic

7.7

Given this experimental setup, what would be the limits on the domain and range? 1000 and 0

7.8

What is the domain and range of the function? the range is 50 and the domain is 0-1000

7.9

What would this function predict in the other three quadrants? Is this realistic? its unrealistic because you cant have negative weight and length

7.10

What are the magnitudes and the units for the slope:

y-intercept: stretch

x-intercept: mass

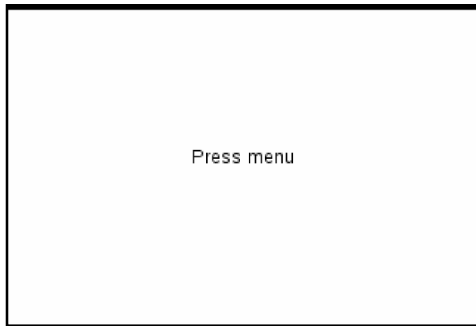
area under the curve: 1000

7.11

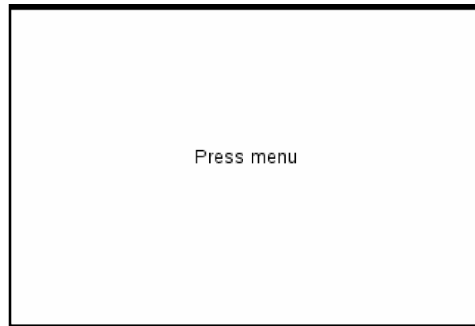
© Rewrite your function as an inverse and see if it matches any better with the class.

1/99

7.12



7.13



7.14

Problem 8

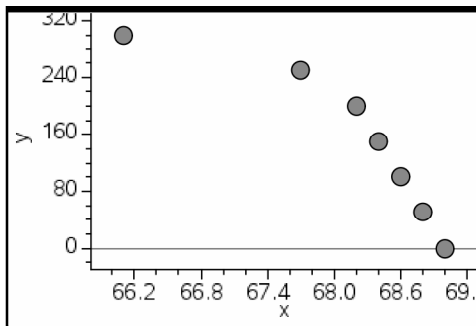
The Spring Thing
Team Member Names:kimberly swarengen
nick smith taha kouchehbagh

Date:12 5 12
Period:2

8.1

| A | x | B | y | C | D |
|---|------|-----|---|---|---|
| 1 | 69 | 0 | | | |
| 2 | 68.8 | 50 | | | |
| 3 | 68.6 | 100 | | | |
| 4 | 68.4 | 150 | | | |
| 5 | 68.2 | 200 | | | |
| 6 | 67.7 | 250 | | | |

8.2



8.3

the spring gets longer as you add more weight

8.4

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

8.5

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

8.6

Given this experimental setup, what would be the limits on the domain and range?

8.7

What is the domain and range of the function?

8.8

What would this function predict in the other three quadrants? Is this realistic?

8.9

What are the magnitudes and the units for the slope:

y-intercept:

x-intercept:

area under the curve:

8.10

© Rewrite your function as an inverse and see if it matches any better with the class.

1/99

8.11

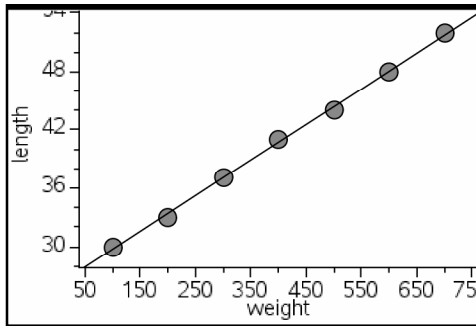
Problem 9

The Spring Thing
Team Member Names:
Drew Teaster
Janerose Ralpho
Jorbok Andrew
Alex Dietrich
Date:12.05.12
Period:2nd

9.1

| | A | B | C | D |
|---|--------|--------|---|---|
| | weight | length | | |
| 1 | 100 | 30 | | |
| 2 | 200 | 33 | | |
| 3 | 300 | 37 | | |
| 4 | 400 | 41 | | |
| 5 | 500 | 44 | | |
| 6 | 600 | 48 | | |

9.2



9.3



9.4

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

Spring length increases by 3-4 cm with each additional 100 grams

9.5

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

no bc if we increase 1 variable wouldnt match the other

9.6

Given this experimental setup, what would be the limits on the domain and range?

domain-1000 and 0 range-64 and 30

9.7

What is the domain and range of the function?

(0,28)min (1000,64)max

9.8

What would this function predict in the other three quadrants? Is this realistic?

9.9

What are the magnitudes and the units for the slope:

y-intercept:

x-intercept:

area under the curve:

9.10

© Rewrite your function as an inverse and see if it matches any better with the class.

9.11

Problem 10

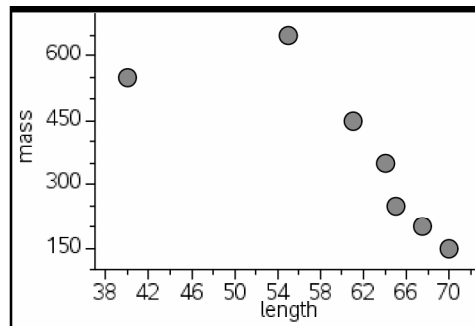
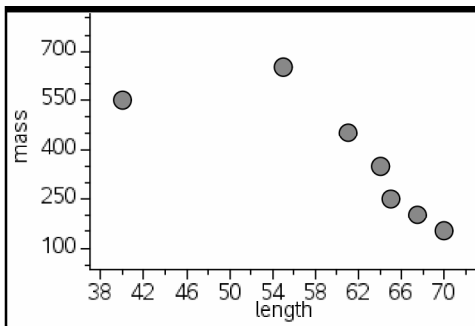
The Spring Thing
 Team Member Names: Sarah Wilson,
 Elizabeth Jardin

 Date: 12/05/12
 Period: 2nd

| | A length | B mass | C | D |
|---|----------|--------|---|---|
| 1 | 70 | 150 | | |
| 2 | 67.5 | 200 | | |
| 3 | 65 | 250 | | |
| 4 | 64 | 350 | | |
| 5 | 61 | 450 | | |
| 6 | 40 | 550 | | |

10.1

10.2



10.3

10.4

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.
 the spring stretches when weight is put on.

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled? <

10.5

10.6

Given this experimental setup, what would be the limits on the domain and range?

10.7

What is the domain and range of the function?

10.8

What would this function predict in the other three quadrants? Is this realistic?

10.9

What are the magnitudes and the units for the slope:

y-intercept:

x-intercept:

area under the curve:

10.10

© Rewrite your function as an inverse and see if it matches any better with the class.

1/99

10.11

Problem 11

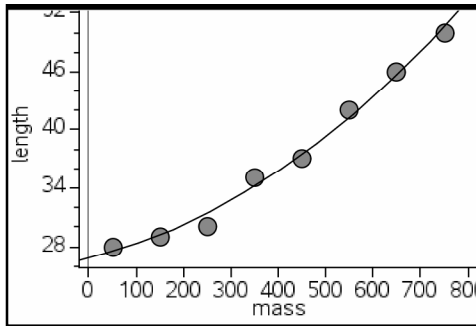
The Spring Thing
Team Member Names: Robby, Walker
Stephanie
Date: 12-5-12
Period: 2nd

11.1

| | A | B | C | D |
|---|------|--------|---|---|
| | mass | length | | |
| 1 | 50 | 28 | | |
| 2 | 150 | 29 | | |
| 3 | 250 | 30 | | |
| 4 | 350 | 35 | | |
| 5 | 450 | 37 | | |
| 6 | 550 | 42 | | |

A1 50

11.2



11.3

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

The more weight you put on the spring the longer the length of the spring.

11.4

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

it would keep increasing

$$y = 0.000027x^2 + 0.011548x + 26.814$$

11.5

Given this experimental setup, what would be the limits on the domain and range?

domain: 0 is less than x and x is less than 1000

range: some where around 28 and 55 or 60

11.6

What is the domain and range of the function?

domain is mass in grams.

range is length in cm.

11.7

**What would this function predict in the other three quadrants? Is this realistic?

positive in the fourth quadrant

11.8

What are the magnitudes and the units for the slope: cm per grams

y-intercept: grams

x-intercept: cm

area under the curve: grams

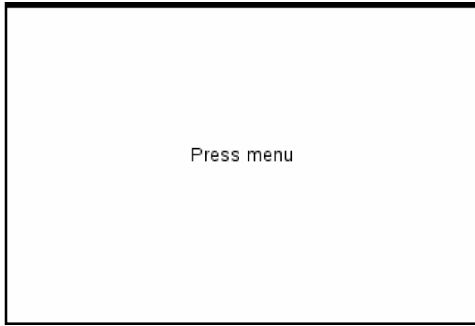
11.9

© Rewrite your function as an inverse and see if it matches any better with the class.

$$-0.000027 \cdot x^2 + 0.011548 \cdot x + 26.8143$$

1/99

11.10



11.11

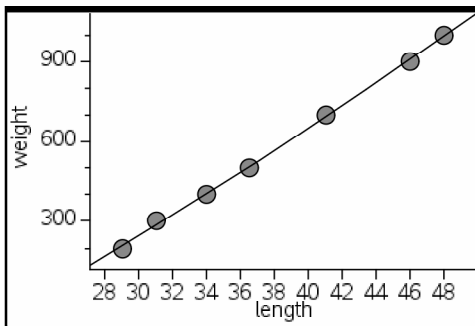
Problem 12

The Spring Thing
Team Member Names:
jay maddie clayton
Date:12-5-2012
Period:2

12.1

| A | weight | B | length | C | D |
|---|--------|---|--------|---|---|
| 1 | 200 | | 29 | | |
| 2 | 300 | | 31 | | |
| 3 | 400 | | 34 | | |
| 4 | 500 | | 36.5 | | |
| 5 | 700 | | 41 | | |
| 6 | 900 | | 46 | | |

12.2



12.3

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.
The more mass you put on the spring the longer the spring gets.

12.4

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?
 $y = .149345x^2 + 29.9699x + 786.983$

12.5

Given this experimental setup, what would be the limits on the domain and range?
7

12.6

What is the domain and range of the function?
 weight=x,length=y

12.7

What would this function predict in the other three quadrants? Is this realistic?
 its positive

12.8

What are the magnitudes and the units for the slope:
 y-intercept:length
 x-intercept:width
 area under the curve:

12.9

© Rewrite your function as an inverse and see if it matches any better with the class.
 $y = -.149345x^2 + 29.9699x - 786.983$

12.10

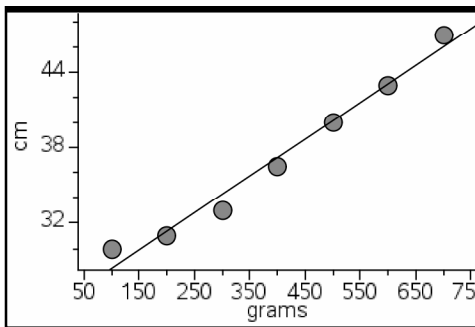
Problem 13

The Spring Thing
 Team Member Names: Troy Bowen,
 Bryceson Satterthwaite, chris
 poindexter, kolby brown
 Date: 12-5-12
 Period: 2rd

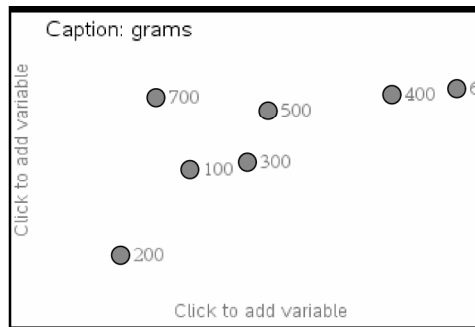
13.1

| | A | B | C | D |
|---|-------|------|-----------------|---|
| | grams | cm | =delta list(cm) | |
| 1 | 100 | 30 | 1 | |
| 2 | 200 | 31 | 2 | |
| 3 | 300 | 33 | 3.5 | |
| 4 | 400 | 36.5 | 3.5 | |
| 5 | 500 | 40 | 3 | |
| 6 | 600 | 42 | 4 | |

13.2



13.3



13.4

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

13.5

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

13.6

Given this experimental setup, what would be the limits on the domain and range?

13.7

What is the domain and range of the function?

13.8

What would this function predict in the other three quadrants? Is this realistic?

13.9

What are the magnitudes and the units for the slope:

y-intercept:

x-intercept:

area under the curve:

13.10

© Rewrite your function as an inverse and see if it matches any better with the class.

1/99

13.11

Problem 14

The Spring Thing

Team Member Names:kyle pate, thatcher radler, alexander abel

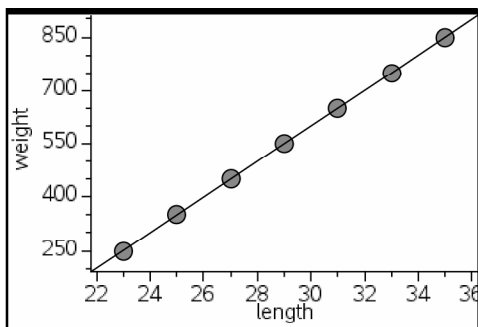
Date:12-5-12

Period:6

14.1

| | A | B | C | D |
|---|--------|--------|---|---|
| | weight | length | | |
| 1 | 250 | 23 | | |
| 2 | 350 | 25 | | |
| 3 | 450 | 27 | | |
| 4 | 550 | 29 | | |
| 5 | 650 | 31 | | |
| 6 | 750 | 33 | | |

14.2



14.3

the length of the spring rises 2 cm for every 100 g

14.4

$$y=50x-900$$

14.5

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

14.6

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

it is only realistic if you stay within the 1000 g max so doubling it would not be realistic

14.7

Given this experimental setup, what would be the limits on the domain and range? 0 to 1000

14.8

What is the domain and range of the function? 0 and 1000

14.9

What would this function predict in the other three quadrants? Is this realistic? no it is only in 2 quadrants and since you cant have - length or mass it has no use

14.10

What are the magnitudes and the units for the slope: 50 grams

y-intercept: 900

x-intercept:

area under the curve:

14.11

© Rewrite your function as an inverse and see if it matches any better with the class.

1/99

14.12

Problem 15

The Spring Thing

Team Member Names: zach akers
justin younce eric rukgaber nick zenaro

Date: 12-5-12

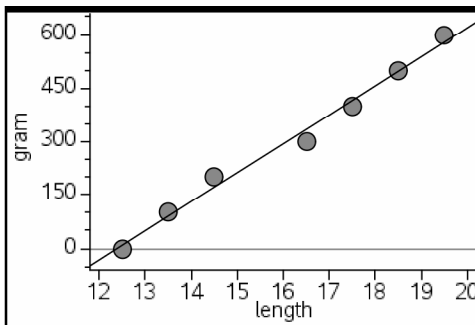
Period: 6

15.1

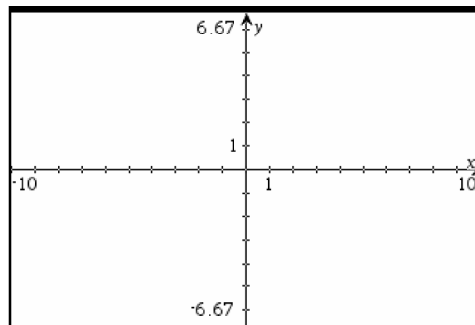
| A | gram | B | length | C | D |
|---|------|---|--------|---|---|
| 1 | 0 | | 12.5 | | |
| 2 | 100 | | 13.5 | | |
| 3 | 200 | | 14.5 | | |
| 4 | 300 | | 16.5 | | |
| 5 | 400 | | 17.5 | | |
| 6 | 500 | | 18.5 | | |

A1 0

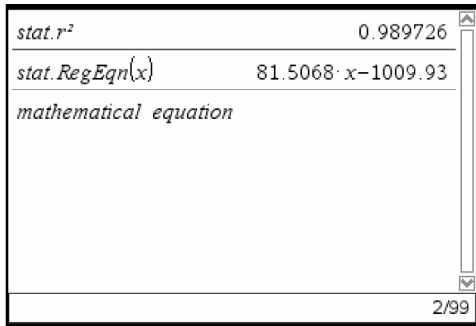
15.2



15.3



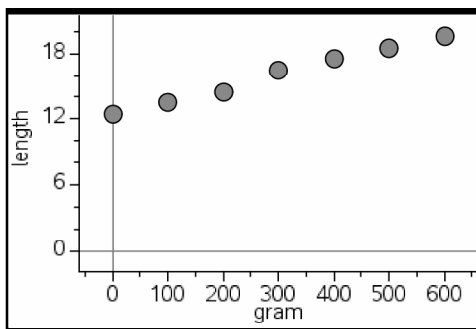
15.4



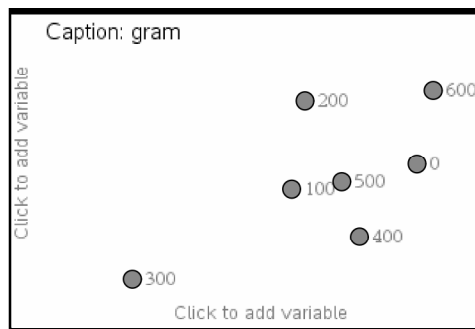
15.5

yes 0 and 1000
 in 2 quadrant it would predict any thing
 slope 82
 x
 y 1010
 under curve
 no wouldnt work

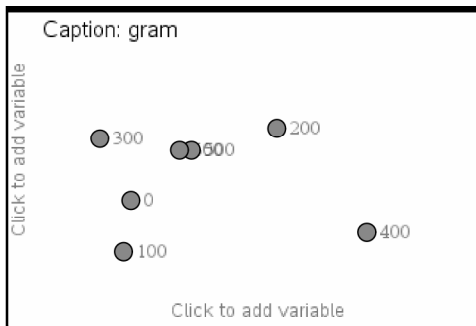
15.6



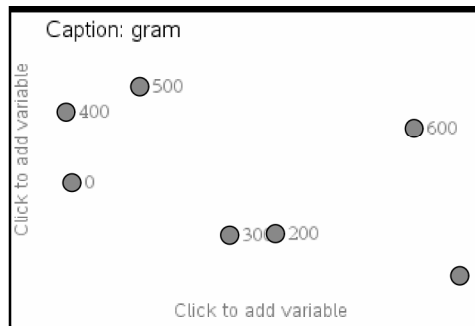
15.7



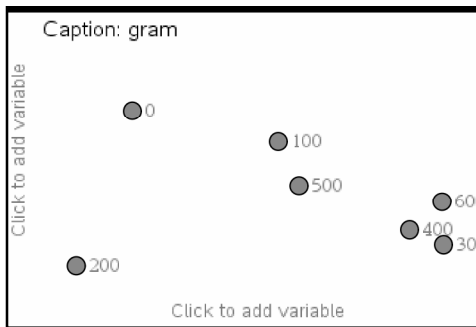
15.8



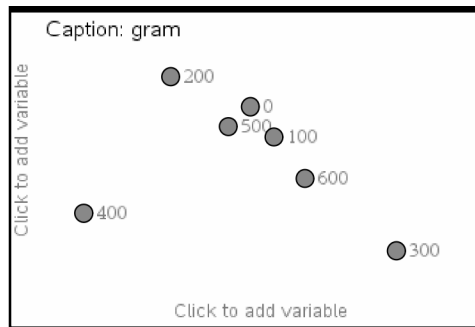
15.9



15.10



15.11



15.12

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

15.13

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

15.14

Given this experimental setup, what would be the limits on the domain and range?

15.15

What is the domain and range of the function?

15.16

What would this function predict in the other three quadrants? Is this realistic?

15.17

What are the magnitudes and the units for the slope:

y-intercept:

x-intercept:

area under the curve:

15.18

© Rewrite your function as an inverse and see if it matches any better with the class.

1/99

15.19

Problem 16

The Spring Thing

Team Member Names:

lauren latta

carly bright

carley king

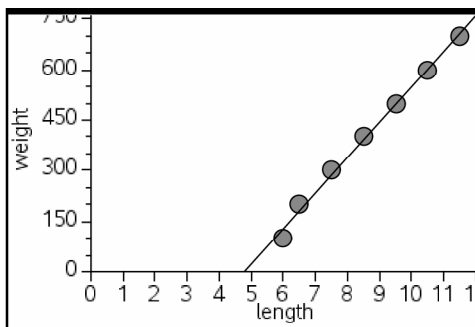
Date: dec. 5, 2012

Period: 6

16.1

| | A length | B weight | C | D |
|---|----------|----------|---|---|
| 1 | 6 | 100 | | |
| 2 | 6.5 | 200 | | |
| 3 | 7.5 | 300 | | |
| 4 | 8.5 | 400 | | |
| 5 | 9.5 | 500 | | |
| 6 | 10.5 | 600 | | |

16.2



16.3

as the weight increases by 100g, the length of the spring constantly increases by 1in.

16.4

$$y=105.099*x+500.85$$

16.5

Based on the data that you collected and the plot of this data, produce a sentence that describes how the spring behaves.

16.6

Predict if the function is realistic if you increase your independent or dependent variable by a factor of 10? Doubled?

it is only realistic if stays within the limitations of 1000g.

if you doubled it then it would exceed the 1000g limit

16.7

Given this experimental setup, what would be the limits on the domain and range?

the domain limits would be 0g and 100g, and 6in and 14.5in.

16.8

What is the domain and range of the function?
any values from positive or negative integers.

16.9

What would this function predict in the other three quadrants? Is this realistic?
since the 3rd quadrant would become negative there would be no reason to measure

16.10

What are the magnitudes and the units for the slope:
y-intercept:
.500.85
x-intercept:
5
area under the curve:
.5*5*11.5=28.75

16.11

0.5 · 5 · 11.5 28.75

16.12

© Rewrite your function as an inverse and see if it matches any better with the class.
no, negative length

16.13

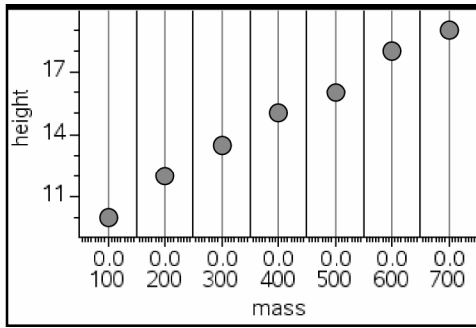
Problem 17

tavon. daniels . javaris williams. travin
12.5.12
6th

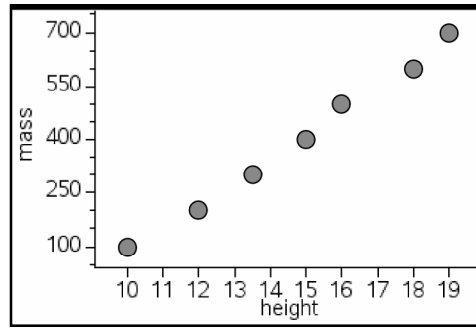
17.1

| | A mass | B height | C | D |
|---|--------|----------|---|---|
| 1 | 100 | 10 | | |
| 2 | 200 | 12 | | |
| 3 | 300 | 13.5 | | |
| 4 | 400 | 15 | | |
| 5 | 500 | 16 | | |
| 6 | 600 | 18 | | |

17.2



17.3



17.4