



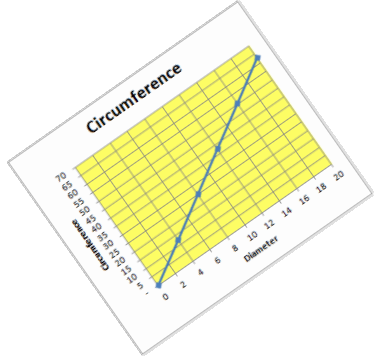
$$\text{Cost} = \$0.10 * (\text{number of texts}) + \$50$$

Multiple Representations of Linear Relationships

12 Real World Situations

"At the North parking garage it costs \$5 to bring your car into the garage plus \$2 for every hour the car is parked."

Year	Tree Height in Feet
0	8
2	10
4	12
10	18
16	24
20	28



Instructions for Multiple Representations

*At the football game they expect
That for every 4 people who
attend. The game the concession
stand Will sell 3 hot dogs.*

For each of the real-world situations you will be given either a graph, verbal description, table, or equation that represents a linear relationship between 2 variables. You will need to create the missing 3 representations that match the representation provided. Your graphs must be properly labeled and scaled. Use the information provided for each situation to find the appropriate domain and range.

Situations

#	Name	Representation Given	Representations to Create
1	Parking Garage Cost	Verbal Description	Graph, Table, Equation
2	Monthly Cell Phone Bill	Equation	Verbal Description, Graph, Table
3	Tree Growth vs. Years	Table	Verbal Description, Graph, Equation
4	Miles Traveled vs. Hours	Graph	Verbal Description, Table, Equation
5	Plumbing Repair Cost	Verbal Description	Graph, Table, Equation
6	Gas Cost vs. Gallons	Equation	Verbal Description, Graph, Table
7	Pumpkin Weights	Table	Verbal Description, Graph, Equation
8	Miles per Gallon	Graph	Verbal Description, Table, Equation
9	Hot Dog Sales	Verbal Description	Graph, Table, Equation
10	Temp Scale Conversion	Equation	Verbal Description, Graph, Table
11	Currency Conversion	Table	Verbal Description, Graph, Equation
12	Circle Circumference	Graph	Verbal Description, Table, Equation

Situation #1: Parking Garage Cost

Description

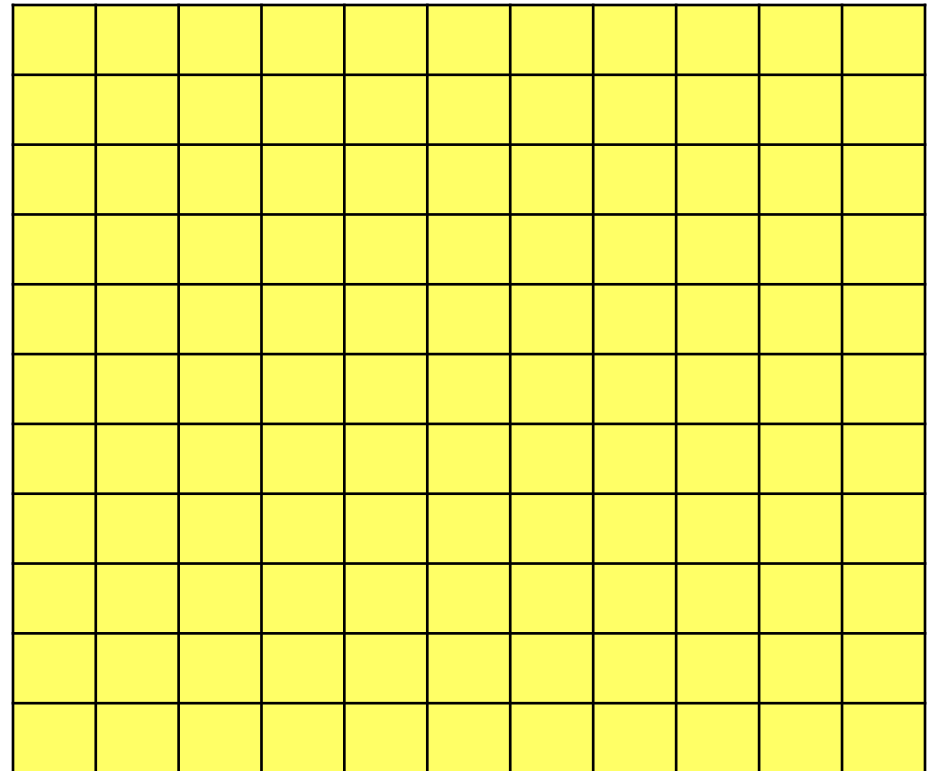
At the North parking garage it costs \$5 to bring your car into the garage plus \$2 for every hour the car is parked.

Equation

Table

Hours	Charge
0	
1	
2	
3	
4	
5	

Graph



Situation #2: Monthly Cell Phone Bill

Description

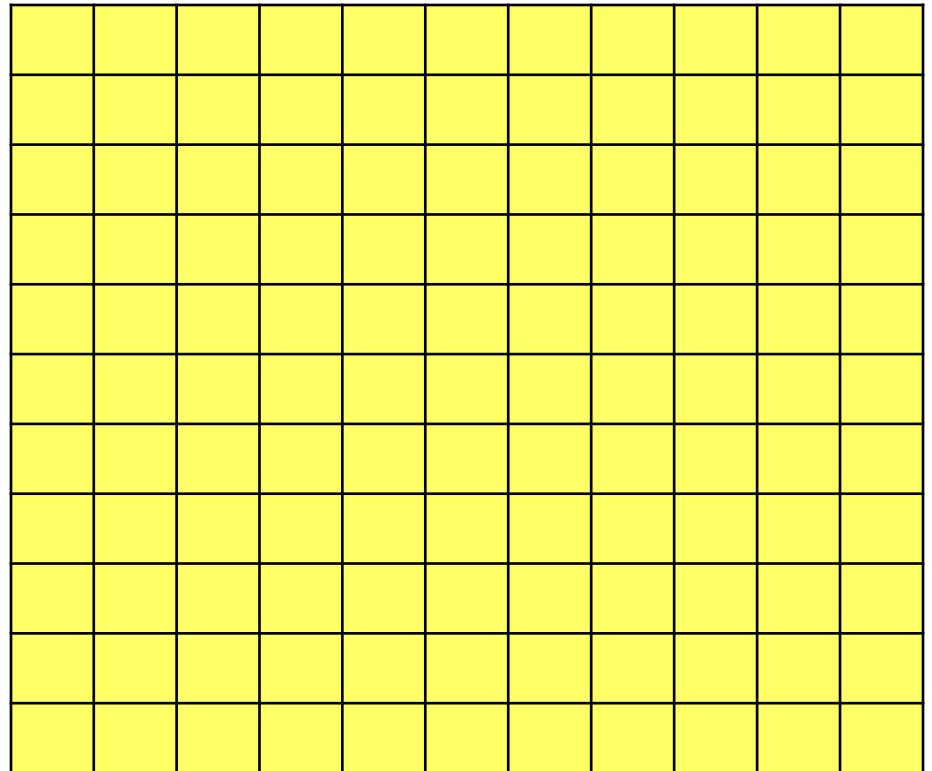
Equation

$$\text{Cost} = \$0.10 * (\text{number of texts}) + \$50$$

Table

Number of Texts	Charge
0	
100	
200	
300	
400	
500	

Graph



Situation #3: Tree Growth vs. Years

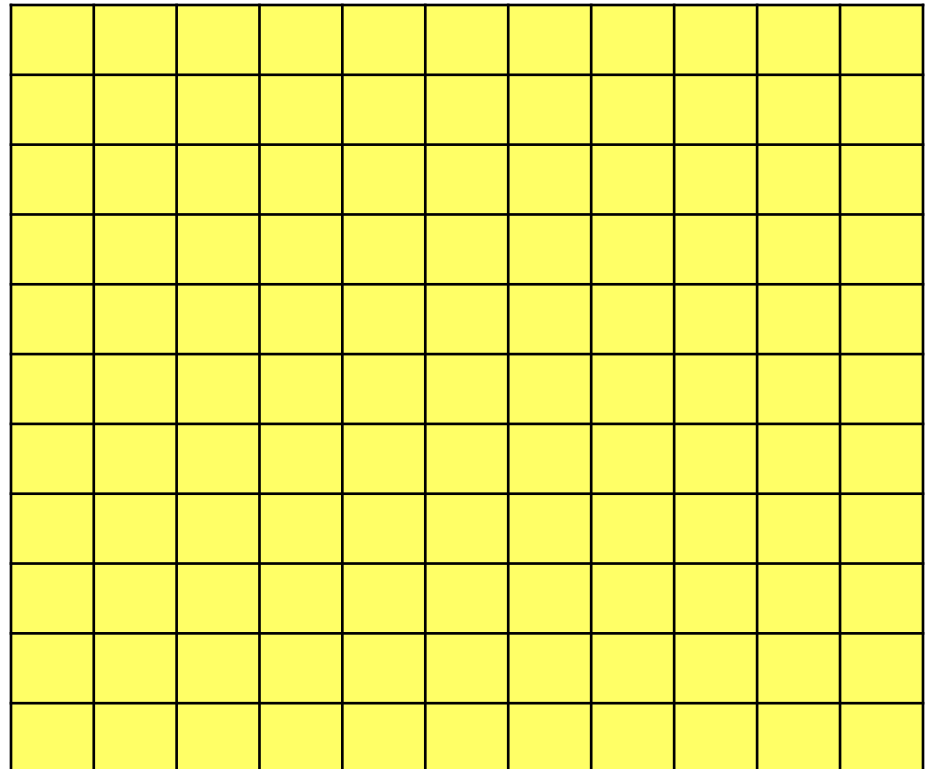
Description

Equation

Table

Year	Tree Height in Feet
0	8
2	10
4	12
10	18
16	24
20	28

Graph



Situation #4: Miles Traveled vs. Hours

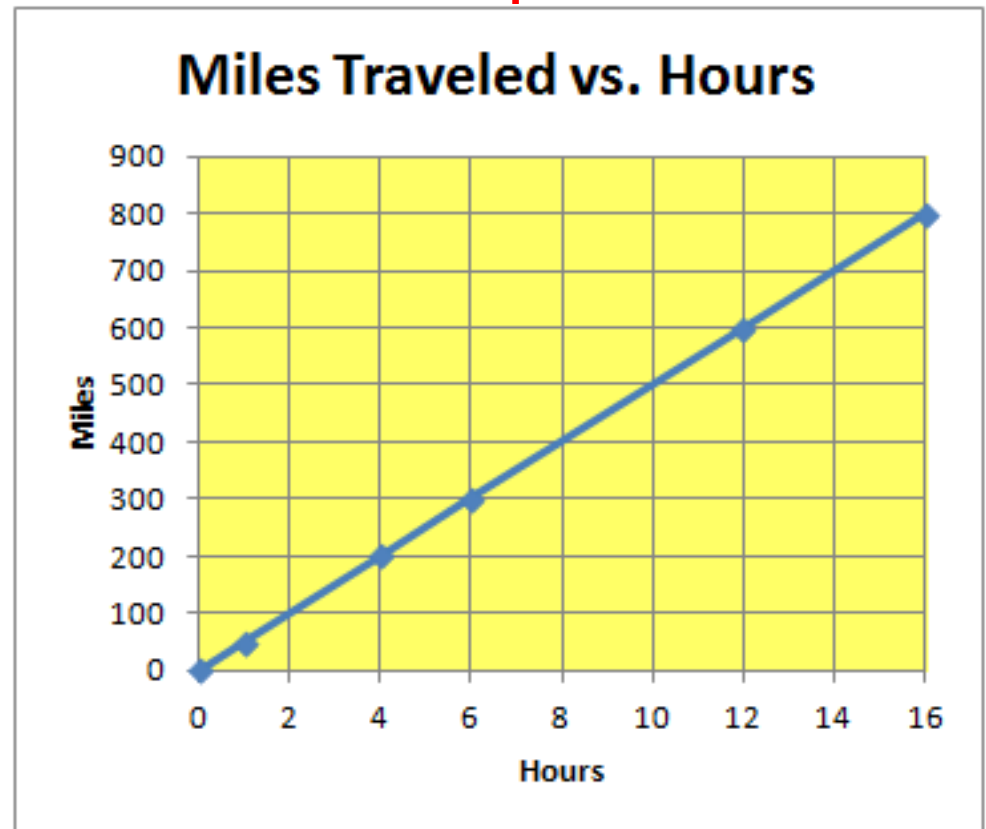
Description

Equation

Table

Hours	Miles Traveled
0	
1	
2	
3	
4	
5	

Graph



Situation #5: Plumbing Repair Costs

Description

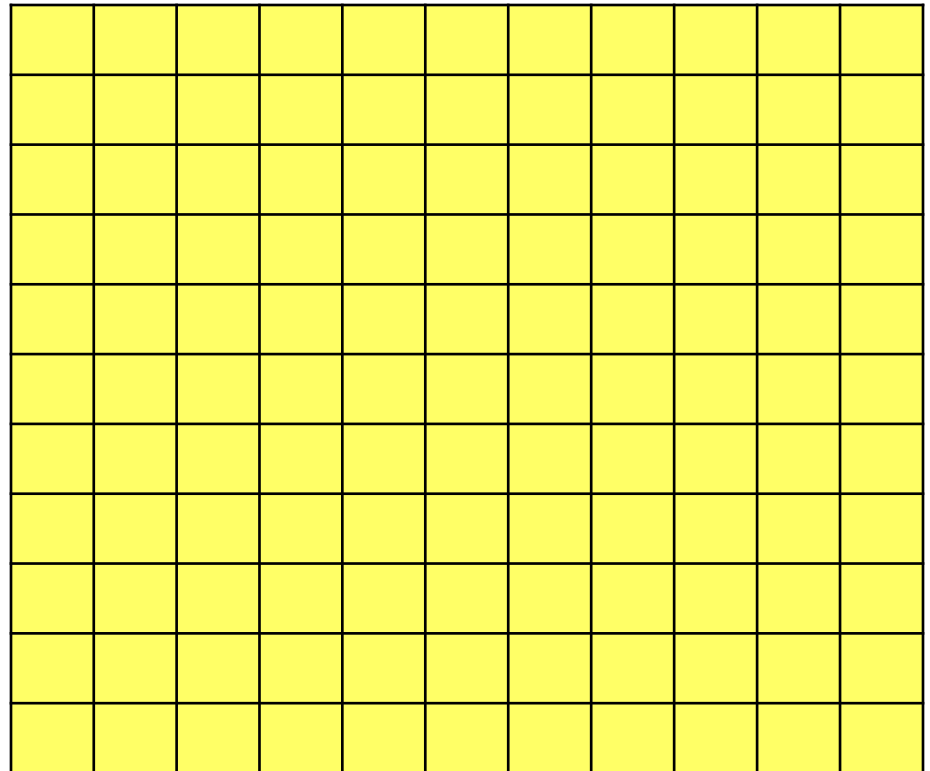
Mario's plumbing service
Charges \$40 to make a house
Call plus \$25 an hour.

Equation

Table

Hours	Charge
0	
1	
2	
3	
4	
5	

Graph



Situation #6: Gas Cost vs. Gallons

Description

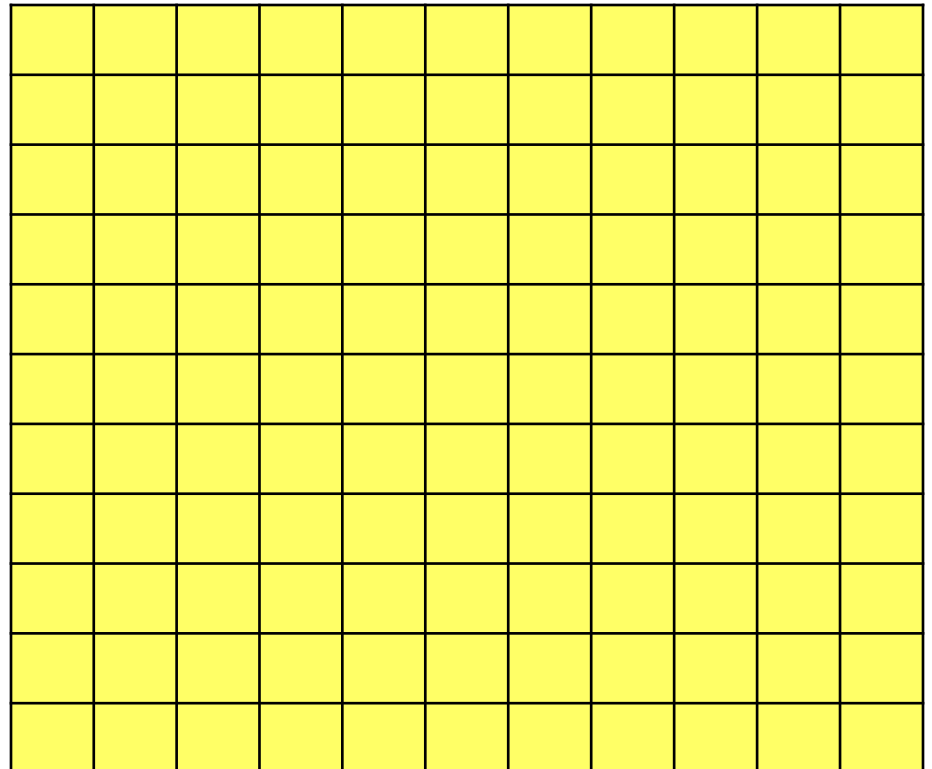
Equation

$$\text{Cost} = \$3.50 \times \text{Number of Gallons}$$

Table

Gallons of Gas	Cost
0	
5	
10	
15	
20	
25	

Graph



Situation #7: Pumpkin Weights

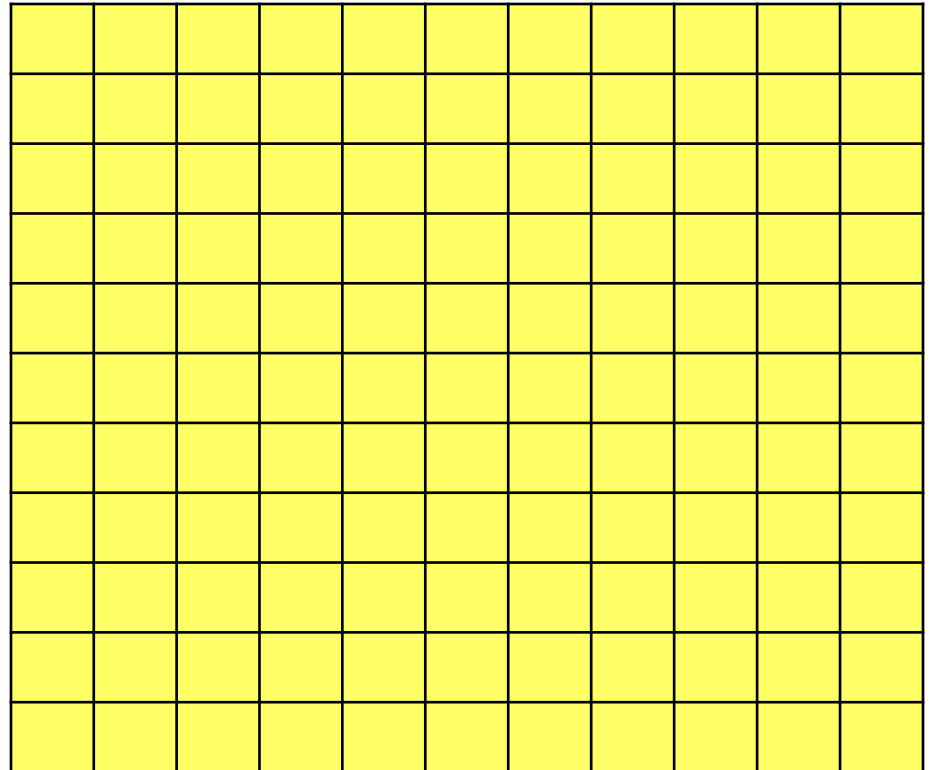
Description

Equation

Table

Pumpkins	Weight in Pounds
0	0
5	8
10	16
15	24
20	32
25	40

Graph



Situation #8: Miles per Gallon

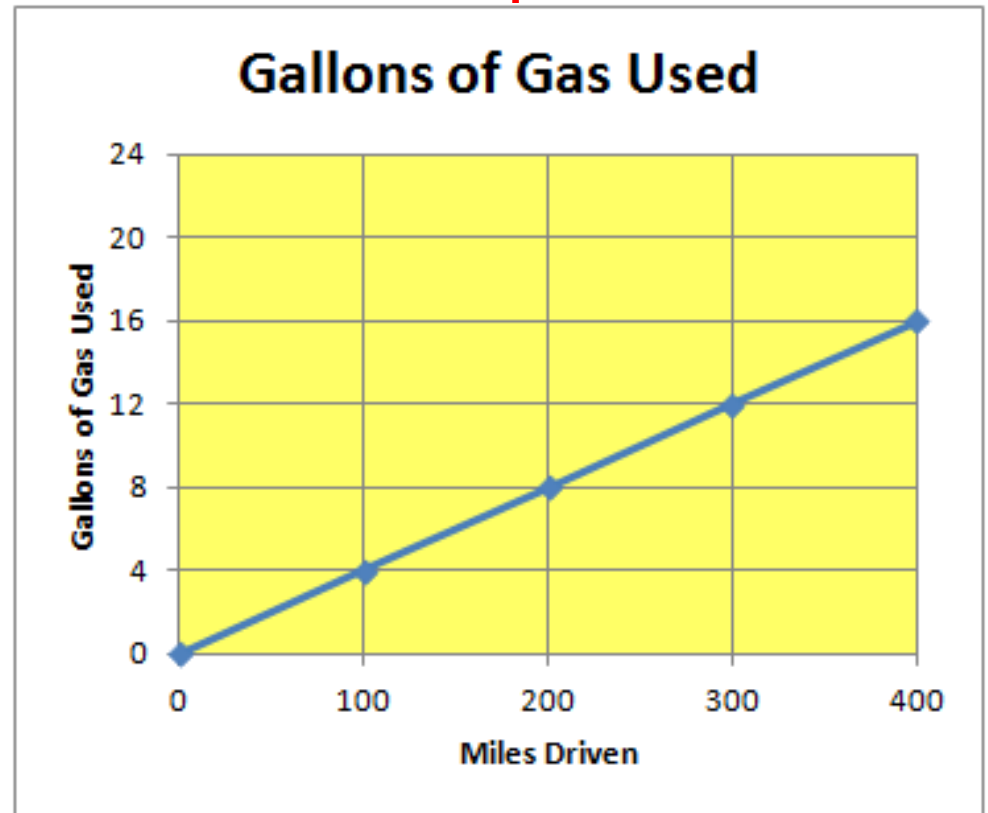
Description

Equation

Table

Miles Driven	Gallons of Gas used
0	
50	
100	
150	
200	
250	

Graph



Situation #9: Hot Dog Sales

Description

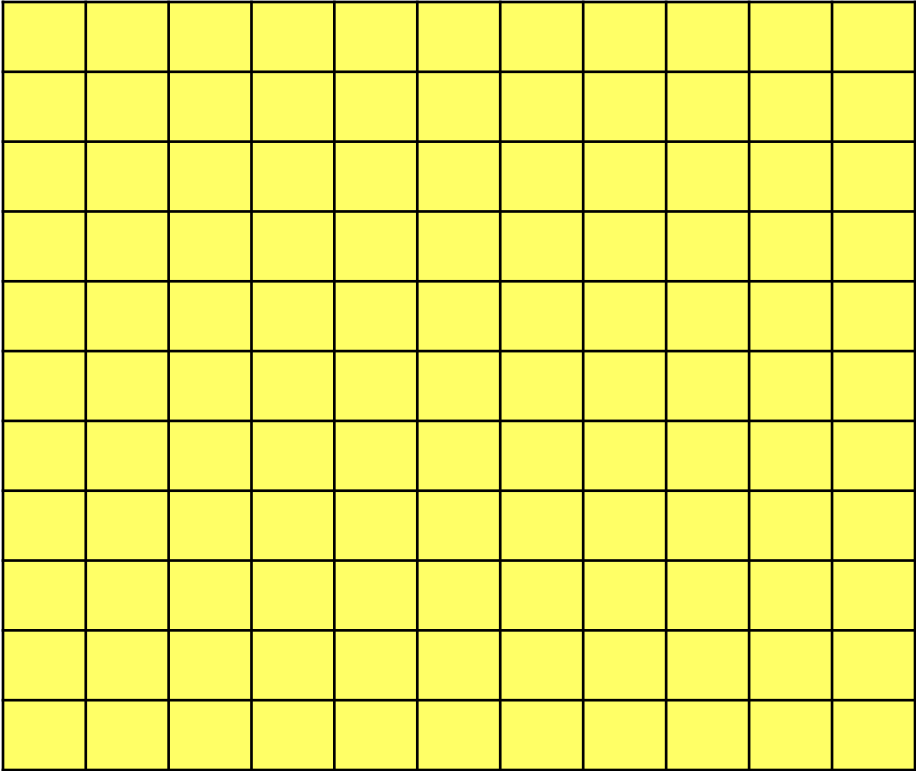
At the football game they expect
That for every 4 people who attend
The game the concession stand
Will sell 3 hot dogs.

Equation

Table

Attendance	Hot Dogs Sold
0	
400	
800	
1200	
1600	
2000	

Graph



Situation #10: Temperature Scale Conversion

Description

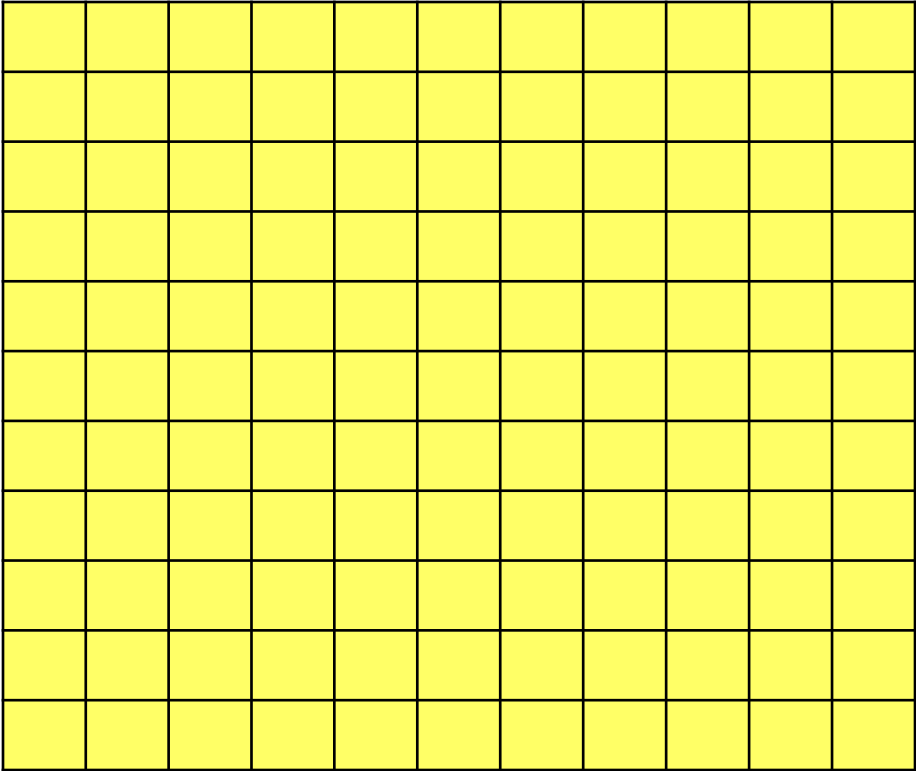
Equation

$$\text{Fahrenheit} = (1.8 \times \text{Celsius}) + 32$$

Table

Degrees Celsius	Degrees Fahrenheit
0	
20	
40	
60	
80	
100	

Graph



Situation #11: Currency Conversion

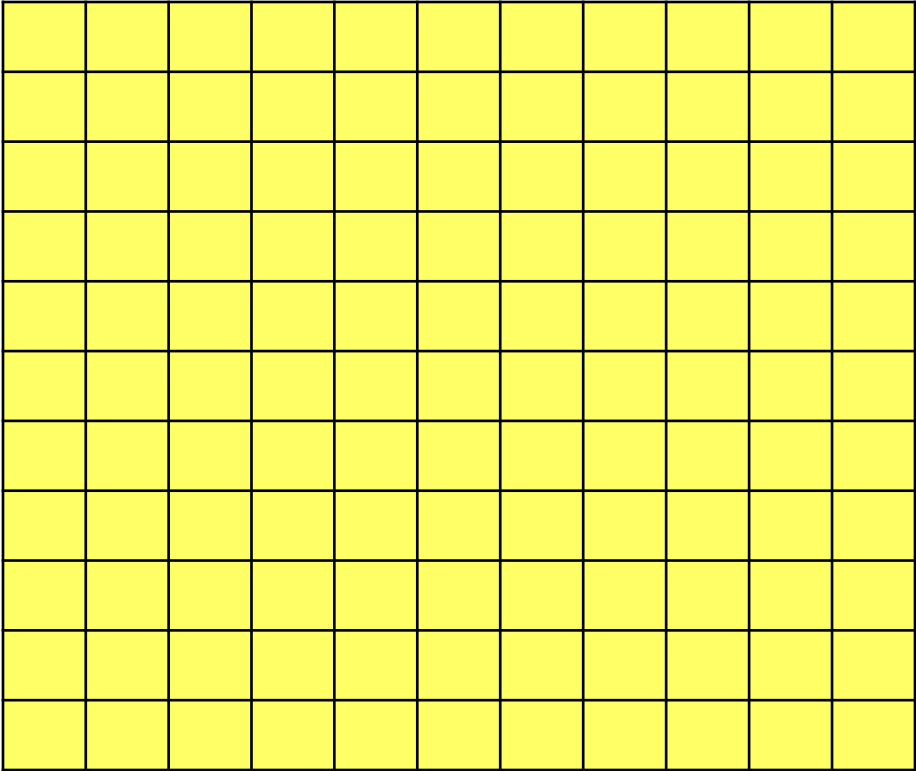
Description

Equation

Table

US Dollars	Euros
0	0
5	6
10	12
15	18
20	24
25	30

Graph



Situation #12: Circle Circumference

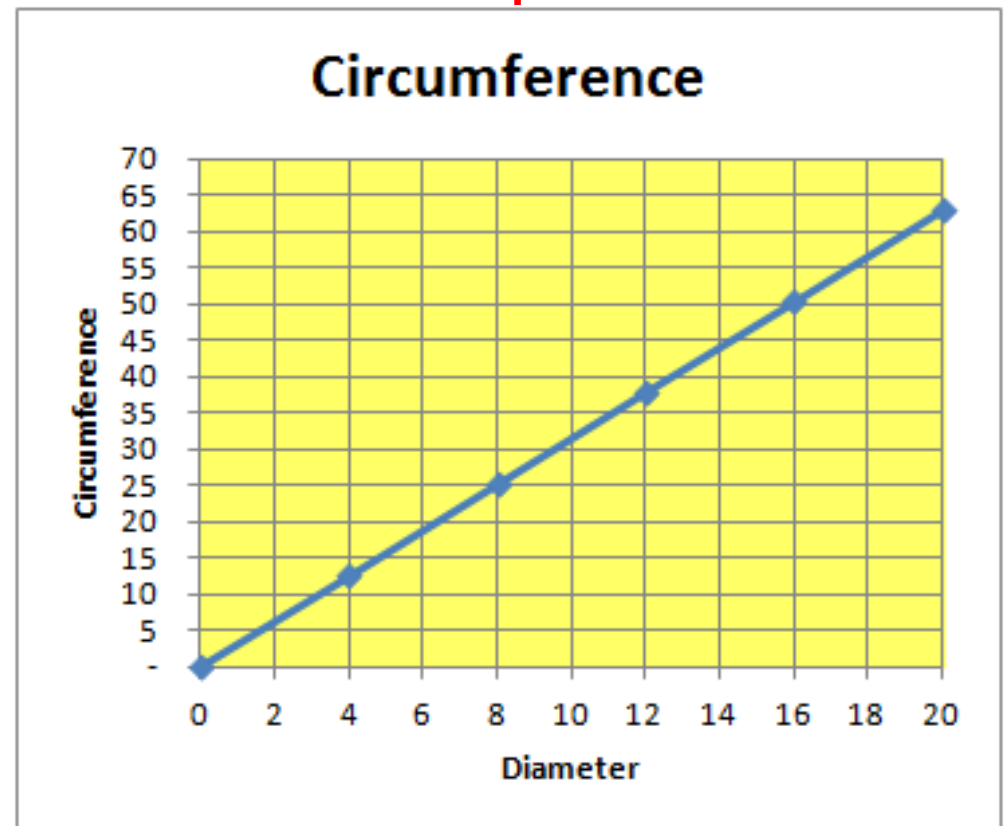
Description

Equation

Table

Diameter	Circumference
0	
1	
5	
10	
12	
20	

Graph



ANSWER KEY

Situation #1: Parking Garage Cost - Answer Key

Description

At the North parking garage it costs \$5 to bring your car into the garage plus \$2 for every hour the car is parked.

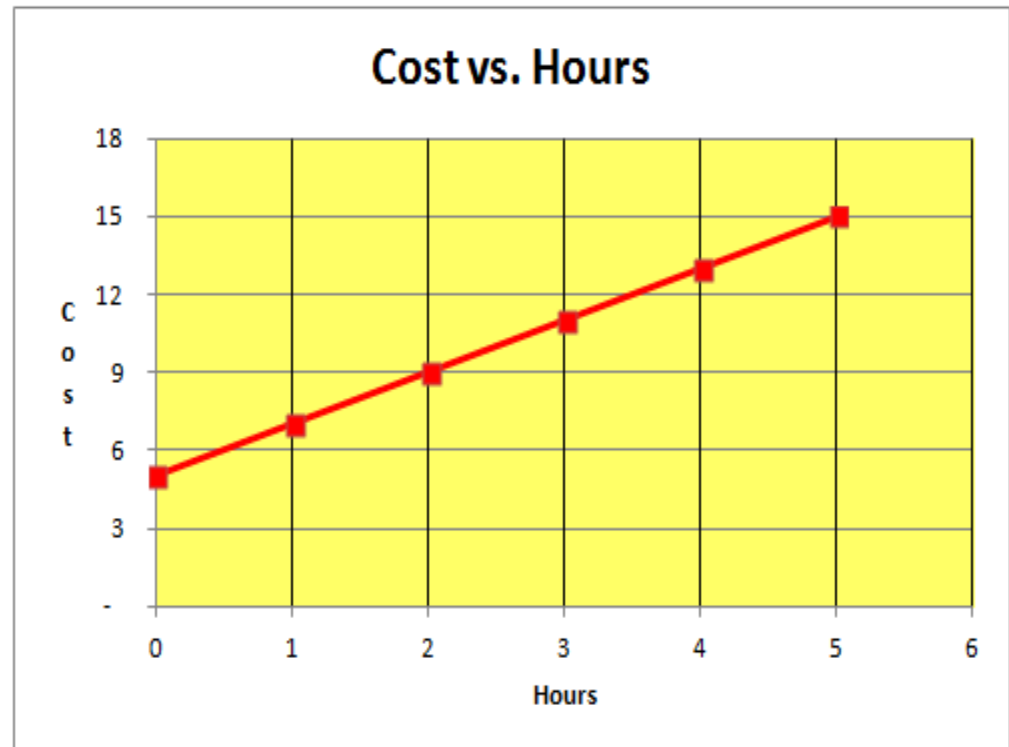
Equation

$$\text{Cost} = \$2 \times \text{Hours} + \$5$$

Table

Hours	Charge
0	5
1	7
2	9
3	11
4	13
5	15

Graph



Situation #2: Monthly Cell Phone Bill – Answer Key

Description

My monthly cell phone bill is a Fixed charge of \$50 plus 10 cents for every Text I send or receive.

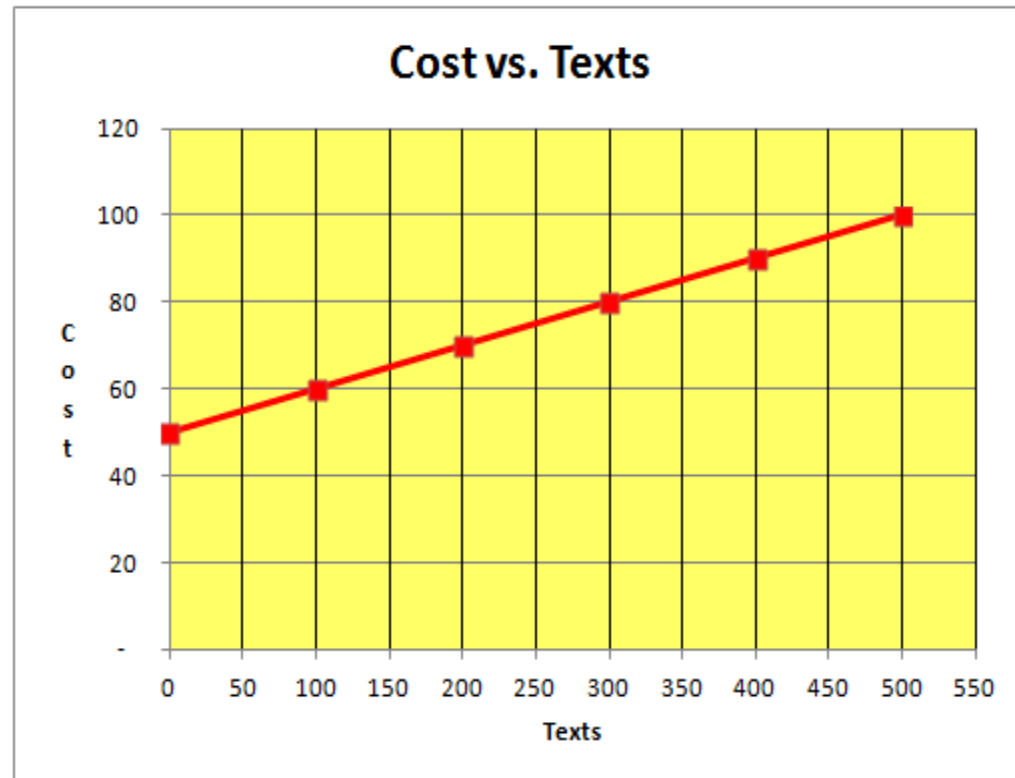
Equation

$$\text{Cost} = \$0.10 * (\text{number of texts}) + \$50$$

Table

Number of Texts	Charge
0	50
100	60
200	70
300	80
400	90
500	100

Graph



Situation #3: Tree Growth vs. Year – Answer Key

Description

The tree in my yard was
8 feet tall when it was planted
And it grows 1 foot each year.

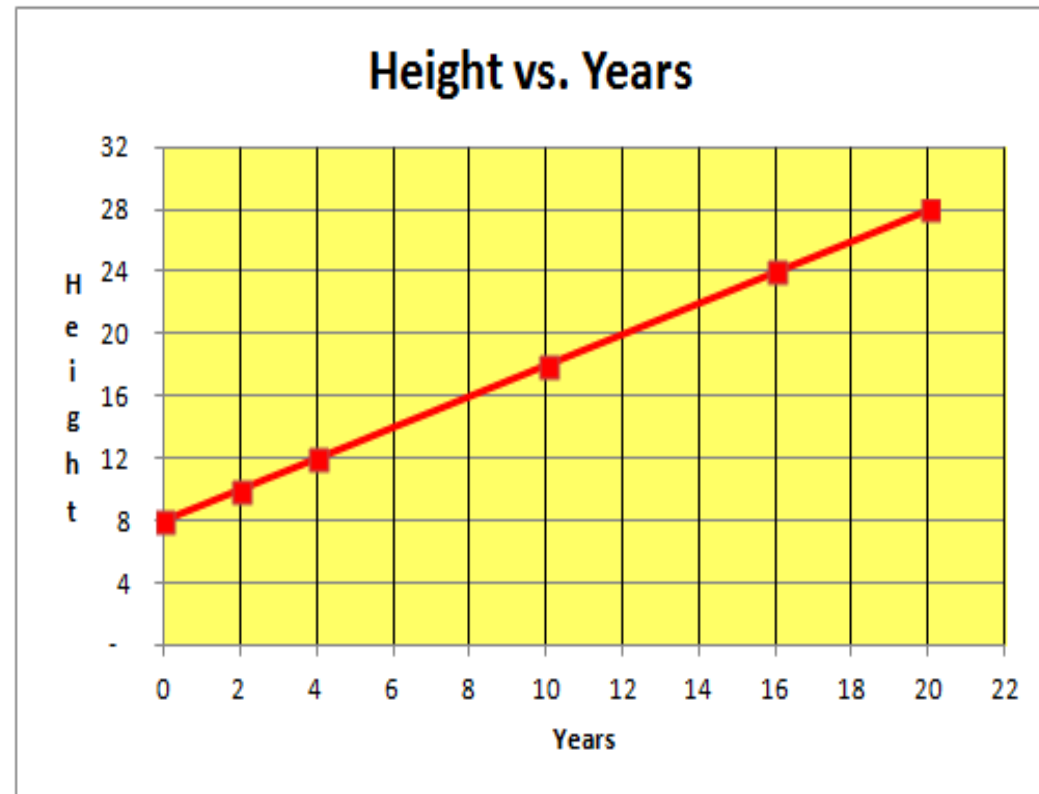
Equation

$$\text{Height} = \text{Years} \times 1 + 8$$

Table

Year	Tree Height in Feet
0	8
2	10
4	12
10	18
16	24
20	28

Graph



Situation #4: Miles Traveled vs. Hours – Answer Key

Description

I drove at the rate of 50 miles per hour

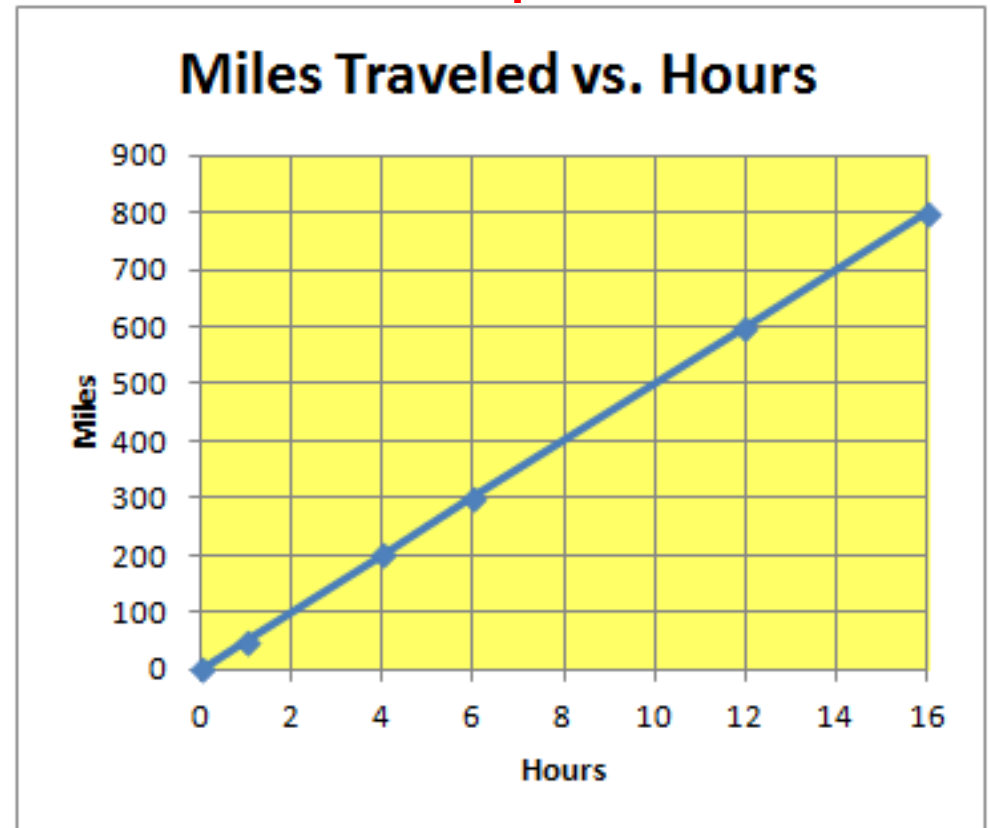
Equation

$$\text{Miles} = 50 \times \text{Hours}$$

Table

Hours	Miles Traveled
0	0
1	50
2	100
3	150
4	200
5	250

Graph



Situation #5: Plumbing Repair Costs – Answer Key

Description

Mario's plumbing service
Charges \$40 to make a house
Call plus \$25 an hour.

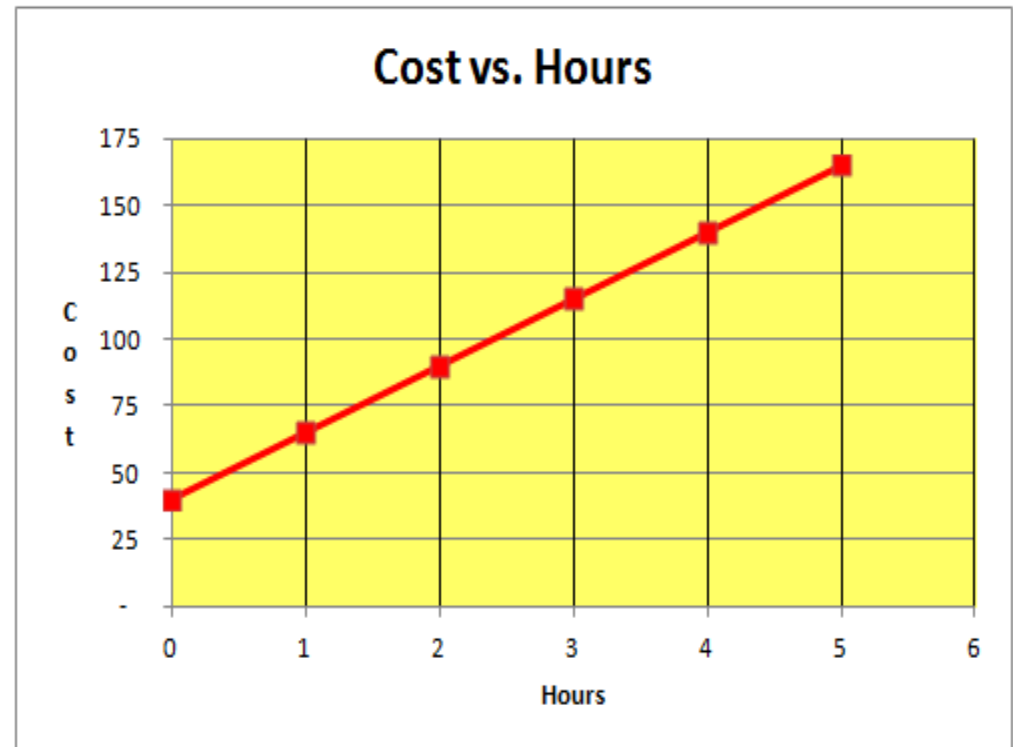
Equation

$$\text{Cost} = \$25 \times \text{Hours} + \$40$$

Table

Hours	Charge
0	40
1	65
2	90
3	115
4	140
5	165

Graph



Situation #6: Gas Cost vs. Gallons – Answer Key

Description

Gas costs \$3.50
per gallon

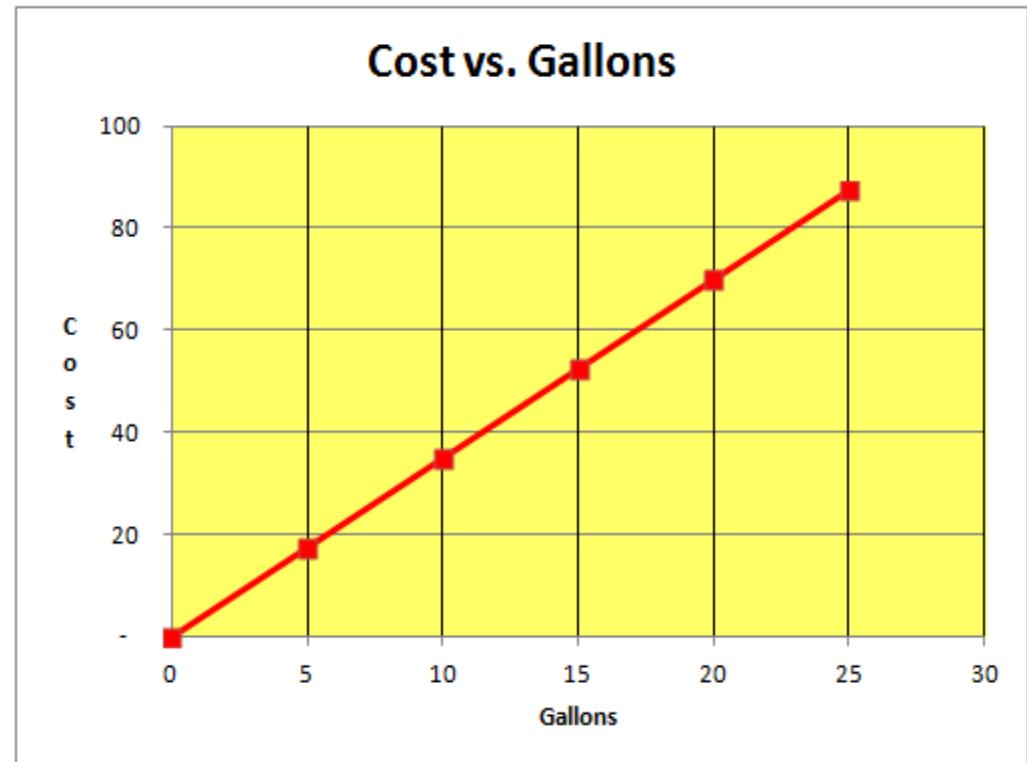
Equation

$$\text{Cost} = \$3.50 \times \text{Number of Gallons}$$

Table

Gallons of Gas	Cost (\$)
0	0.00
5	17.50
10	35.00
15	52.50
20	70.00
25	87.50

Graph



Situation #7: Pumpkin Weights – Answer Key

Description

Each pumpkin weighs 1 and $\frac{3}{5}$ pounds.

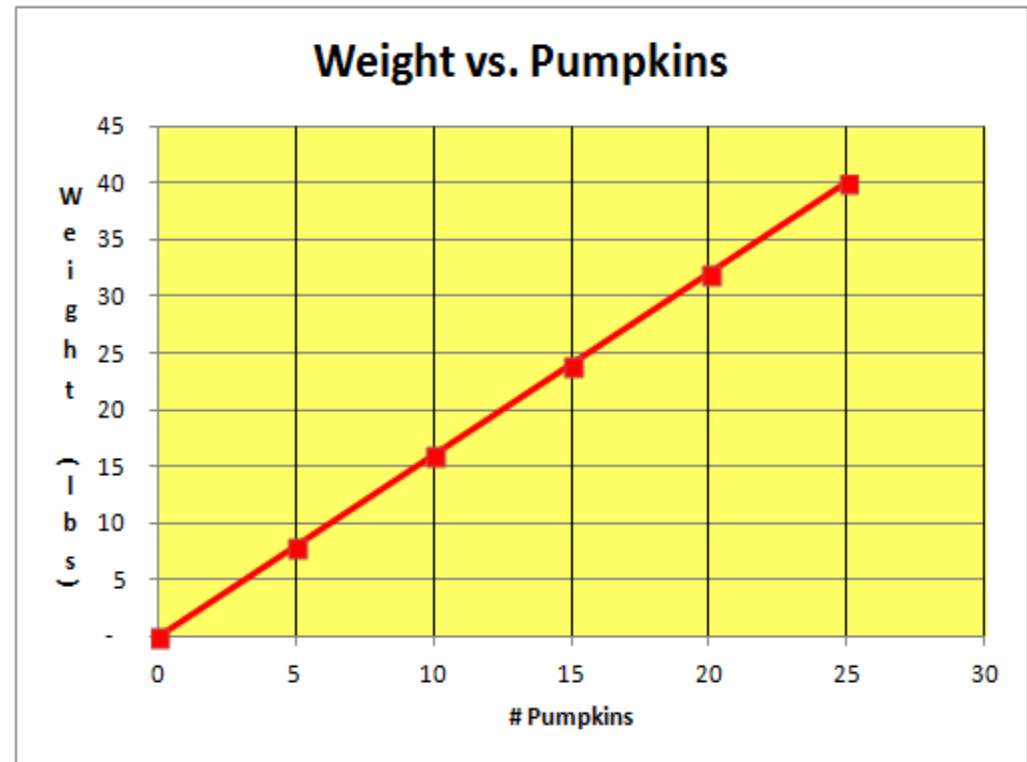
Equation

$$\text{Weight} = \# \text{ Pumpkins} \times 1.60$$

Table

Pumpkins	Weight in Pounds
0	0
5	8
10	16
15	24
20	32
25	40

Graph



Situation #8: Miles per Gallon – Answer Key

Description

My car uses 1 gallon
Of gas for every 25
Miles I drive

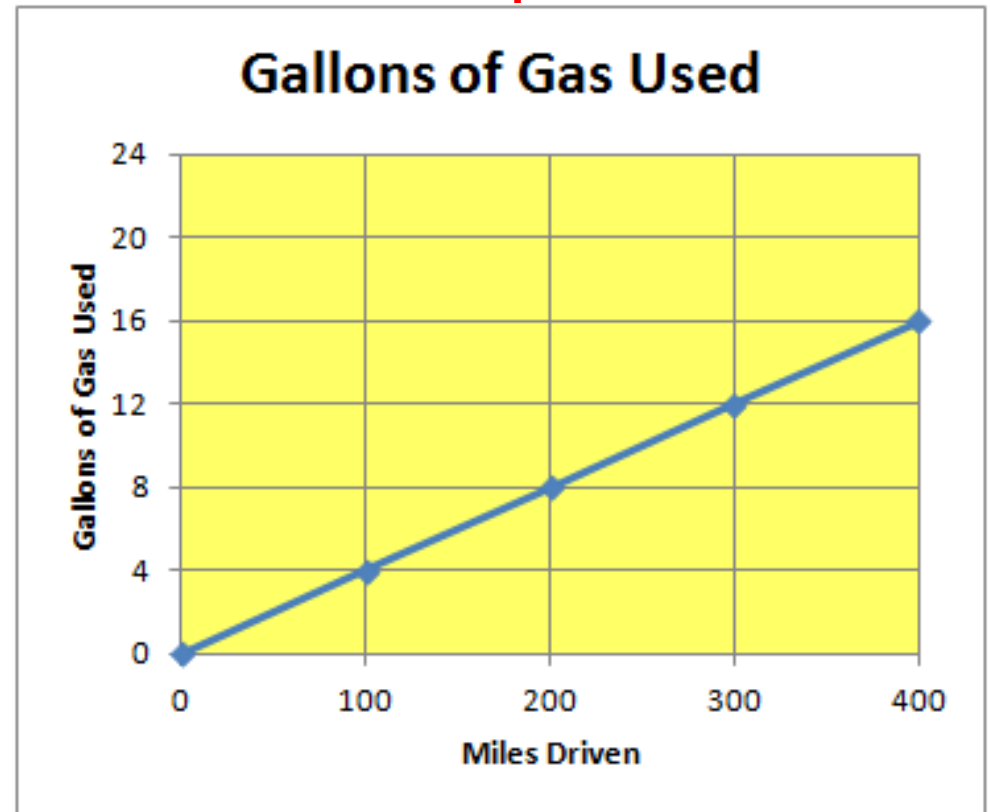
Equation

$$\text{Gallons} = \text{Miles Driven} \div 25$$

Table

Miles Driven	Gallons of Gas used
0	0
50	2
100	4
150	6
200	8
250	10

Graph



Situation #9: Hot Dog Sales – Answer Key

Description

At the football game they expect
That for every 4 people who attend
The game the concession stand
Will sell 3 hot dogs.

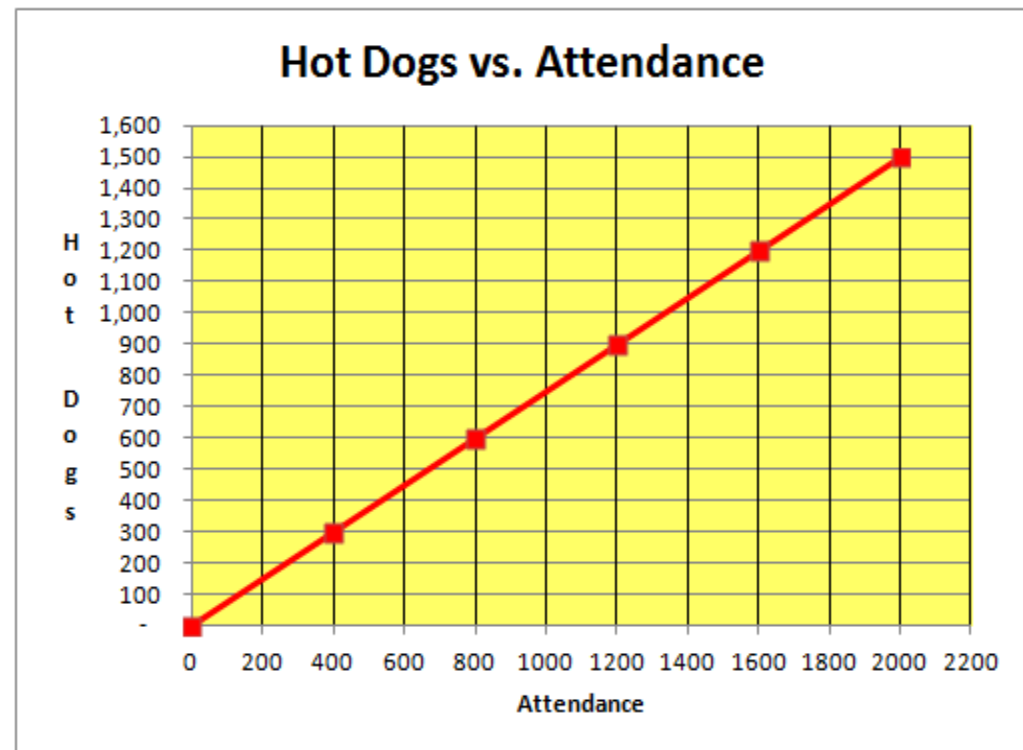
Equation

$$\text{Hot Dogs Sold} = \text{Attendance} \times 0.75$$

Table

Attendance	Hot Dogs Sold
0	0
400	300
800	600
1200	900
1600	1200
2000	1500

Graph



Situation #10: Temp Scale Conversion – Answer Key

Description

To convert from degrees
Celsius to degrees
Fahrenheit multiply by 1.80
Then add 32

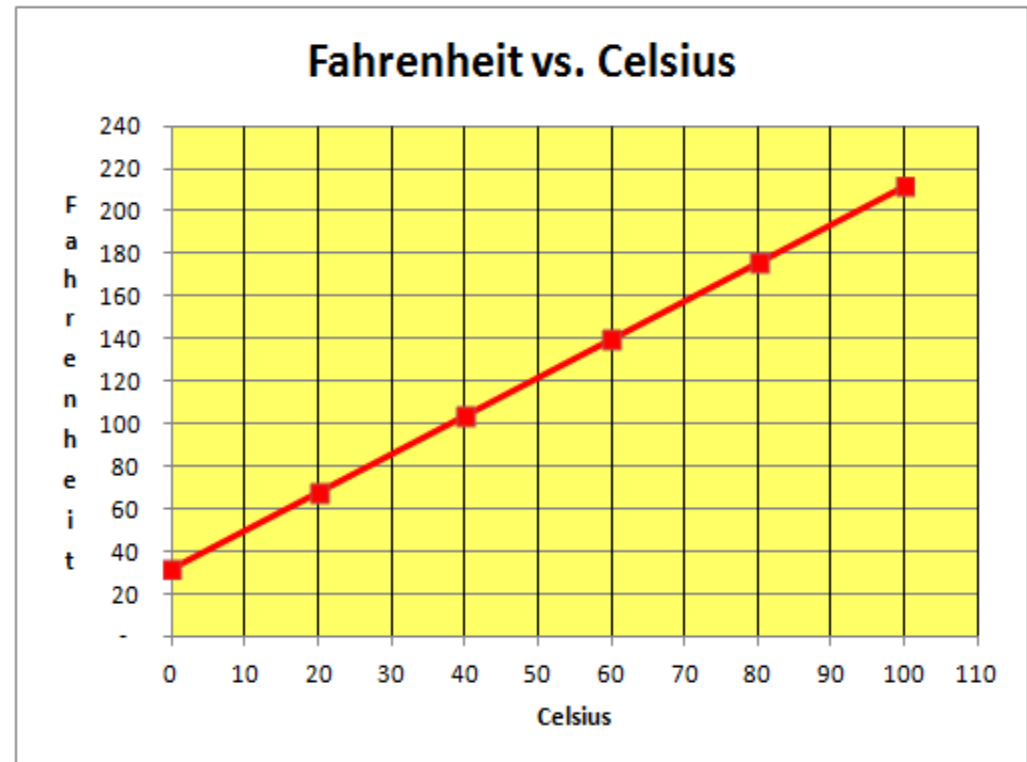
Equation

$$\text{Fahrenheit} = (1.8 \times \text{Celsius}) + 32$$

Table

Degrees Celsius	Degrees Fahrenheit
0	32
20	68
40	104
60	140
80	176
100	212

Graph



Situation #11: Currency Conversion – Answer Key

Description

To convert from dollars to Euros, multiply dollars by 1.20

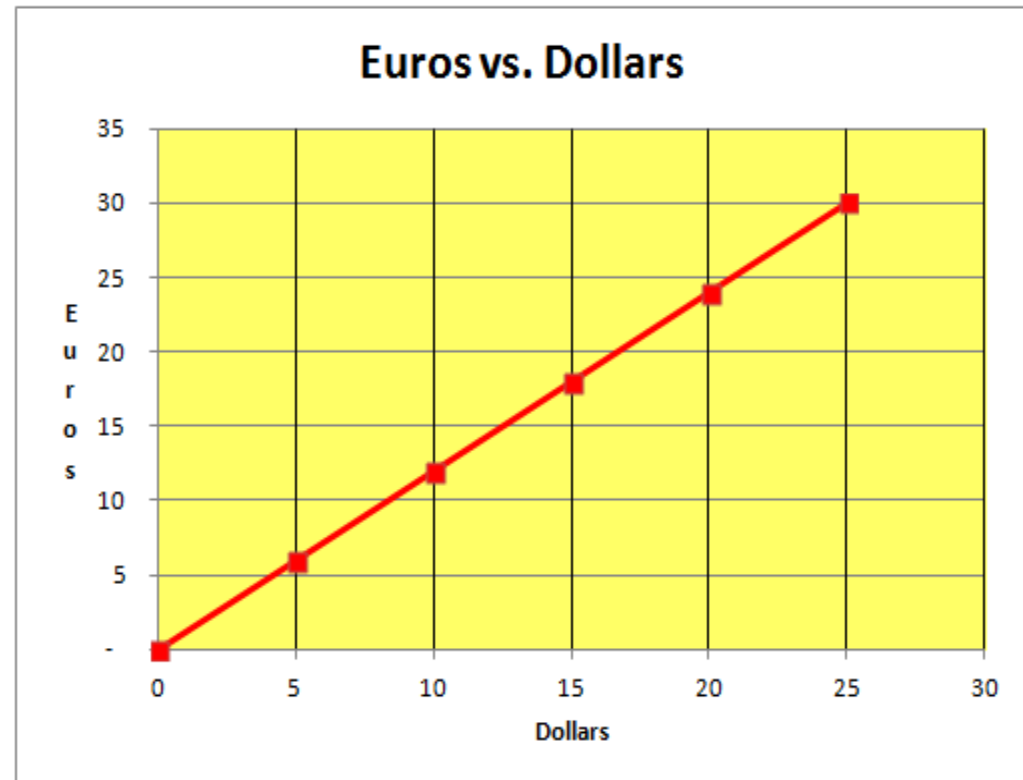
Equation

$$\text{Euros} = \text{Dollars} \times 1.20$$

Table

US Dollars	Euros
0	0
5	6
10	12
15	18
20	24
25	30

Graph



Situation #12: Circle Circumference – Answer Key

Description

The circumference of a Circle is equal to its Diameter multiplied by 3.14 (π)

Equation

$$\text{Circumference} = \text{Diameter} \times 3.14$$

Table

Diameter	Circumference
0	-
1	3.14
5	15.70
10	31.40
12	37.68
20	62.80

Graph

