# Unit 4

# Linear Relations

Week # 22

Dec 5-9:43 PM

Oct. 27, 2015

May. 16, 2018

## Mini-Lesson # 1

### Linear Relations

- Creating a table of values
- Substituting into an equation

Oct 30-8:55 PM

Variable - a letter or symbol that represents an unknown number.

Independent Variable - a variable whose value is not determined by the value of another variable, it determines the value of dependent variable.
ex: time, people, age

Dependent Variable - a variable whose value is determined by the independent variable

ex: money made, distance, numbers of seats

Oct 30-8:56 PM

$10 every time you mow the lawn

"How much you make" depends on "the number of times you mow the lawn"

Dep

ind

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## Example 1:

Tim pays 22 cents per minute to use his phone.

What is the independent variable? how many minutes.

What is the dependent variable? How he pays (total cost)

Lets make a table of values to describe this pattern.

| Number of minutes | Total Cost |
|---|---|
| 0 | 0 |
| 1 | 22 |
| 2 | 44 |
| 3 | 66 |
| 40 | |
| ·Y0 | |

$C = 22m$
$C = 22(40)$
$C = 880$ cents
$= \$8.80$

Oct 30-8:57 PM

## Example 1:

Kate is selling school t-shirts. Each t-shirt cost 10$.

Independent Variable:

Dependent Variable:

Table of Values:

$C = 10s$

| Ind. # of T-shirts (s) | dep. Total Cost (C) |
|---|---|
| 0 | $C = 10(0) = 0$ |
| 1 | $10(1) = 10$ |
| 2 | 20 |
| 3 | 30 |
| 4 | 40 |

total Cost

# of T-shirts

$C = 10s$
$C =$

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Now lets use an equation:

if x = 5 find:

a) x + 3
(5) + 3 = 8

b) 4(x)
4(5) = 20

c) 2(x) - 2
2(5) - 2 = 8

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Use an equation to make a table of values:

y = 3 + x

**Use an equation to make a table of values:**

**X is always the** independent **variable.**

**Y is always the** dependent **variable.**

Table of values

| (IV) X | (DV) Y = 3 + x |
|---|---|
| -2 | 3 + (-2) = 1 |
| -1 | 3 + (-1) = 2 |
| 0 | 3 + (0) = 3 |
| 1 | 3 + (1) = 4 |
| 2 | 3 + (2) = 5 |

Oct 30-9:01 PM

Ex 2:

$y = 2x + 1$

independent variable

dependent variable

Table of values

| (IV) X | (DV) $Y = 2x + 1$ |
|---|---|
| -2 | 2(-2) + 1 = -3 |
| -1 | 2(-1) + 1 = -1 |
| 0 | 2(0) + 1 = 1 |
| 1 | 2(1) + 1 = 3 |
| 2 | 2(4) + 1 = 5 |

Oct 30-9:02 PM

Ex 2: $y = -2x - 7$

table of values

| x | y |
|---|---|
| -2 | $-2(-2) - 7 = 4 - 7 = -3$ |
| -1 | $-2(-1) - 7 = 2 - 7 = -5$ |
| 0 | $-2(0) - 7 = 0 - 7 = -7$ |
| 1 | $-2(1) - 7 = -2 - 7 = -9$ |
| 2 | |

-2 -2 -2

Oct 31-11:44 AM

End of mini lesson #1 (Day 2)

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