ELD STANDARD 3: The Language of Mathematics **Grade Algebra I, Unit 2, Representing and Solving Linear Functions**

CONNECTIONS: Michigan Academic Standards for Mathematics - Algebra I

EXAMPLE CONTEXT FOR LANGUAGE USAGE: Students will hear a short narrative read to them by the teacher describing a scenario best represented by a piecewise or step function. The first part of the task is for students to find each event on the given graph. The given graph isn't entirely accurate because it shows the balance changing at a constant rate between each transaction; in reality, the balance only changes at the exact time money is deposited or withdrawn. This task does not account for interest.

The second part of the task is for students to find a more accurate representation of how Jessie's bank account balance changed during the week. The goal is for students to create a piecewise or step graph. As a strategy to differentiate the mathematical demand of the task, a teacher might provide horizontal segments for discrete events so a student could glue/tape segments onto another graph. Additional language supports should be provided for students, so they are able to compare the accuracy of the two graphs (e.g., changing at a constant rate versus changing at an exact time).

Prior to engaging in the task, it is necessary to preteach/review mathematical and context specific words for levels 1 and 2 (e.g., deposited, paid). Note that counting time after a beginning date is an important concept in Algebra. In this example, the graphs start with Sunday at 12:01 am as the starting point (time = 0). In the first graph, deposits and withdrawals always happen at the same time (because each piece of the graph starts when the time value is a whole number). If students do not bring it up, teachers might ask them "Does depositing each day at midnight make sense?" With online deposits, midnight might seem reasonable. Adding points at various times might make sense. For example, Jessie might deposit and pay at noon each day (as shown in the 2nd graph) or maybe Jessie deposits / withdraws at different times each day. Because this information is not included in the story, students may be encouraged to make assumptions using reasoning and creativity.

COGNITIVE FUNCTION: Students will **INTERPRET** a narrative read aloud in order to **ANALYZE** a given graph and then **CONSTRUCT** a graph that more accurately represents the events described in the narrative.
Task is from: https://www.illustrativemathematics.org/content-standards/HSF/IF/C/7/tasks/1840

	Level 1 Entering	Level 2 Emerging	Level 3 Developing	Level 4 Expanding	Level 5 Bridging	Level 6 Reaching
Listening	Interpret a narrative of a function which varies discretely over time read aloud multiple times with intentional pauses and numerical values written after each event to analyze a given graph (which inaccurately represents the described function) and construct a second graph that more accurately represents events from the narrative, using a visual representing the narrative, and working with a partner. E.g., [Show a sketch of a bank with 1.) an arrow and a dollar sign going to illustrate "deposited", and 2.) an arrow and a dollar sign going out to illustrate "paid". Show a labeled days of the week calendar.] Jessie made a graph for the balance in her bank account during this week. Analyze the graph as I read aloud. On Sunday Jessie had $500 in her bank account [pause and scribe $500 next to the bank]. She deposited a check for $50 on Tuesday [pause and scribe $50 next to the word deposited]. Tuesday is 2 days [pause and show two fingers] after Sunday [point at Sunday and Tuesday on the calendar]. Jessie paid [pause and point to the word paid] $250 for rent on Wednesday [pause and scribe $250 next to the word paid]. Wednesday is 3 days [pause and show three fingers] after Sunday [point at Sunday and Wednesday on the calendar]. On Friday, Jessie	Interpret a narrative of a function which varies discretely over time read aloud multiple times with intentional pauses and numerical values written after each event to analyze a given graph (which inaccurately represents the described function) and construct a second graph that more accurately represents the events from the narrative, using a visual representing the narrative, and working with a partner. E.g., [Give students a sketch of a bank with an arrow going in and a dollar sign with the word deposited and an arrow going out and a dollar sign with the word paid] Jessie made a graph for the balance in her bank account during this week. Analyze the graph as I read aloud. At the beginning of the week, Jessie had $500 in her bank account [pause and scribe $500]. She deposited a check for $50 on Tuesday [pause and scribe $50]. Tuesday is two days after Sunday [point to Sunday and Tuesday]. Jessie paid $250 in rent on Wednesday [pause and scribe $250]. On Friday, Jessie deposited $200 in the account [pause and scribe $200]. Friday is 5 days after Sunday [point to Sunday and Friday]. On Saturday she paid $50 for groceries from her bank account [pause and scribe $50]. Saturday is 6 days after Sunday [point to Sunday and Saturday].	Interpret a narrative of a function which varies discretely over time read aloud multiple times with intentional pauses after each event to analyze a given graph (which inaccurately represents the described function) and construct a second graph that more accurately represents the events from the narrative, using a visual representing the narrative, and working with a partner. E.g., [Give students a sketch of a bank with an arrow going in and a dollar sign with the word deposited and an arrow going out and a dollar sign with the word paid]. Jessie made a graph for the balance in her bank account during this week. Analyze the graph as I read aloud. At the beginning of the week, Jessie had $500 in her bank account [pause]. She deposited a check for $50 on Tuesday [pause] and then paid $250 in rent on Wednesday [pause]. Notice that Tuesday is 2 days after Sunday [pause and point to calendar] and Wednesday is 3 days. On Friday, Jessie deposited $200 in the account [pause] and then on Saturday she paid $50 for groceries from her bank account [pause]. Friday is 5 days after Sunday and Saturday is 6 days.	Interpret a narrative of a function which varies discretely over time read aloud multiple times with intentional pauses written after each event to analyze a given graph (which inaccurately represents the described function) and construct a second graph that more accurately represents the events from the narrative and working with a partner. E.g., Jessie made a graph for the balance in her bank account during this week. Analyze the graph as I read aloud. At the beginning of the week, Jessie had $500 in her bank account. [pause] She deposited a check for $50 on Tuesday [pause] and then paid $250 in rent on Wednesday. [pause] Note that Tuesday is 2 days after Sunday and Wednesday is 3. [pause] On Friday, Jessie deposited $200 in the account [pause] and then on Saturday she paid $50 for groceries from her bank account. [pause] Note that Friday is 5 days after Sunday and Saturday is 6.	Interpret a narrative of a function which varies discretely over time read aloud multiple times with intentional pauses after each event to analyze a given graph (which inaccurately represents the described function) and construct a second graph that more accurately represents the events from the narrative and checking with a partner. E.g., Jessie made a graph for the balance in her bank account during this week. Analyze the graph as I read aloud. At the beginning of the week, Jessie had $500 in her bank account. [pause] She deposited a check for $50 on Tuesday [pause] and then paid $250 in rent on Wednesday. [pause] Note that Tuesday is 2 days after Sunday and Wednesday is 3. [pause] On Friday, Jessie deposited $200 in the account [pause] and then on Saturday she paid $50 for groceries from her bank account. [pause] Note that Friday is 5 days after Sunday and Saturday is 6.	

ELD STANDARD 3: The Language of Mathematics	Grade Algebra I, Unit 2, Representing and Solving Linear Functions

EXAMPLE CONTEXT FOR LANGUAGE USAGE: Given a collection of absolute functions represented algebraically, students apply their knowledge of transformations to make conjectures about how parameters transform the functions and use either graphing technology or algebraic evaluation to confirm their conjectures by generating either graphs or tables of the functions. While the strand below is written specifically for absolute value functions, similar strands could be developed for other functions such as linear and piecewise linear in this unit of study. In the example below, students relate the stretch factor to the y-values of function. Alternatively, students should analyze the absolute value functions as piecewise linear where that same parameter affects the slope of the rays from the vertex. As such, students might say, "The slopes for the rays from this vertex are 3 and -3." Anchor charts that document collective knowledge generated about absolute value functions and their transformations benefit all students in mathematics classrooms and should be displayed throughout the unit.

Teachers may use a collection of absolute functions that vary the parameters of the general form f(x) = a|x+b|+c. For example, (1) f(x) = -|x+2|+5, (2) f(x) = 3|x+2|-7, (3) f(x) = 2.5|x+4.5|-2.0, (4) f(x) = -1.3|x-2.7|+0.9, and (5) f(x) = 3.4|x+2.1|-4.9.

The goal is for students to describe the transformations resulting when parameters of y = a|x-b|+c vary. Note that this form does not have a coefficient on x, so there will be no reflection over the y-axis nor any horizontal stretch/shrink. (Teachers may add a coefficient on x for a more challenging task.) This Speaking task is a good opportunity for students to notice that order of transformation matters. Teachers may ask students to describe and investigate differences in transformations on y = 3|x+2|-7 compared to y = 3(|x+2| - 7). For the first function, students should describe the vertical stretch first (y values in y = 3|x| are each 3 times larger than corresponding y values in y = |x|) before describing the vertical and horizontal shifts (y = 3|x+2| - 7 is the function y = 3|x| shifted left by 2 and down by 7). For the second function, students should describe the vertical and horizontal shifts first (y = |x+2| - 7 is the function y = |x| shifted left by 2 and down by 7) and then the vertical stretch (y values in y = 3(|x+2| - 7) are each 3 times larger than corresponding y-values in y = |x+2| - 7.

COGNITIVE FUNCTION: Students at all levels of language proficiency **DESCRIBE** the effects of changing parameters of an absolute value function.

	Level 1 Entering	Level 2 Emerging	Level 3 Developing	Level 4 Expanding	Level 5 Bridging	Level 6 Reaching
Speaking	Describe in phrases the effects of changing parameters of an absolute value function when given its equation and using the student's own visual representation of the function (i.e., graph and/or table), anchor charts about absolute value functions and their transformations, and sentence frames while working in a small group with with mixed abilities, mathematically and linguistically, where students with higher levels of English language proficiency model appropriate responses. [yes/no] _____(Stretch/Shrink) factor _____(#). [yes/no] Reflect over _____(x/y)-axis. [yes/no] Translate _____(left/right) _____(#). [yes/no] Translate_____(up/down) _____(#).	Describe in simple sentences the effects of changing parameters of an absolute value function when given its equation and using the student's own visual representation of the function (i.e., graph and/or table), anchor charts about absolute value functions and their transformations, and sentence frames while working in a small group with with mixed abilities, mathematically and linguistically, where students with higher levels of English language proficiency model appropriate responses. This function ___(is / is not) dilated. [if "is"] The ____(stretch/shrink) factor is _____(#). This function _____(is/is not) reflected. [if "is'] It reflects over ____(x/y) axis. This function ___(is / is not) translated. [if "is"] It shifts _____(left/right) _____(#). It shifts _____(up/down) _____(#).	Describe in complete sentences the effects of changing parameters of an absolute value function when given its equation and using the student's own visual representation of the function (i.e., graph and/or table), a suggested word list with mathematical and contextual (e.g., function, translate(d), stretch(ed), reflect(ed), parameter), and anchor charts about absolute value functions and their transformations, while working in a small group with with mixed abilities, mathematically and linguistically, where students with higher levels of English language proficiency model appropriate responses. E.g., [Given f(x)= 3|x+2| - 7] "I see a stretch factor of 3. That means each y-value of the function y = 3|x| is 3 times larger than each y-value of y = |x|. The function f(x) = 3|x+2| - 7 is translated from y = 3|x|. It shifts to the left 2 units and down 7 units."	Describe in compound and/or complex sentences the effects of changing parameters of an absolute value function when given its equation and using the student's own visual representation of the function (i.e., graph and/or table), a suggested word list with mathematical and contextual (e.g., function, translate(d), stretch(ed), reflect(ed), parameter), and anchor charts about absolute value functions and their transformations, while working in a small group with with mixed abilities, mathematically and linguistically, where students with higher levels of English language proficiency model appropriate responses. E.g., [Given f(x)= 3|x+2| - 7] "I see a stretch factor of 3, so each y-value is three times larger in y = 3|x| compared to y = |x|. The function y = 3|x+2| - 7 has been translated from y = 3|x| by shifting to the left 2 units and down 7 units."	Describe in compound and/or complex sentences the effects of changing parameters of an absolute value function when given its equation and using the student's own visual representation of the function (i.e., graph and/or table), a required word list with mathematical and contextual (e.g., function, translate(d), stretch(ed), reflect(ed). coefficient, factor, constant, parameter), and anchor charts about absolute value functions and their transformations, while working in a small group with with mixed abilities, mathematically and linguistically, where students with higher levels of English language proficiency model appropriate responses. E.g., [Given f(x)= 3|x+2| - 7] "I see a stretch factor of 3, so each y-value of the function y = 3|x| is 3 times larger than each corresponding y-value from y = |x|. Compared to the function y = 3|x|, the function y = 3|x+2| - 7 has been translated to the left 2 units and down 7 units."	**Level 6 Reaching**

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EXAMPLE CONTEXT FOR LANGUAGE USAGE: Students identify key aspects in a narrative and write the inequality that could be modeled from the narrative. The next activity in this lesson sequence would require students to explain their models orally or in writing. Appropriate scaffolds should be provided across the levels of language proficiency so that students' explanations include mathematically precise language such as variable, coefficient, constant, and inequality. (In order to illustrate the contexts in the story, the teacher could either search and provide or sketch images. In this strand, contextual words have been illustrated through internet-based images and the essenence of the story is represented in a teacher's sketch of the problem.)

COGNITIVE FUNCTION: Students at all levels of English language proficiency **READ** mathematical stories in order to **WRITE** an inequality.
https://www.illustrativemathematics.org/content-standards/tasks/643

	Level 1 Entering	Level 2 Emerging	Level 3 Developing	Level 4 Expanding	Level 5 Bridging	Level 6 Reaching
Reading	Analyze a fully illustrated and glossed version of linguistically complex mathematical story in order to model the story with an inequality using an illustrated word bank with both mathematical and contextual words while working with a partner. E.g., Fishing Adventures rents small fishing boats to tourists for day-long fishing trips. Each boat can only carry 1200 pounds of people and gear for safety reasons. Assume the average weight of a person is 150 pounds. Each group will require 200 lbs of gear for the boat plus 10 lbs of gear for each person. Create an inequality describing the restrictions on the number of people possible in a rented boat.	Analyze a glossed version of linguistically complex mathematical story in order to model the story with an inequality using an illustrated word bank with both mathematical and contextual words while working with a partner. E.g., Fishing Adventures rents [gloss: lends for money] small fishing boats to tourists [gloss: visiting people] for day-long fishing trips. Each boat can only carry [gloss: hold] 1200 pounds of people and gear [gloss: things] for safety reasons. Assume the average weight of a person is 150 pounds. Each group will require [gloss: need] 200 lbs of gear [gloss: things] for the boat plus 10 lbs of gear [gloss: things] for each person. Create [gloss: write] an inequality describing [gloss: showing] the restrictions on [gloss: limits] the number of people possible in a rented boat. [gloss: how many people the boat can hold safely]	Analyze a glossed version of linguistically complex mathematical story in order to model the story with an inequality while working with a partner. E.g., Fishing Adventures rents [gloss: lends for money] small fishing boats to tourists [gloss: visiting people] for day-long fishing trips. Each boat can only carry [gloss: hold] 1200 pounds of people and gear [gloss: things] for safety reasons. Assume the average weight of a person is 150 pounds. Each group will require [gloss: need] 200 lbs of gear [gloss: things] for the boat plus 10 lbs of gear [gloss: things] for each person. Create [gloss: write] an inequality describing [gloss: showing] the restrictions on [gloss: limits] the number of people possible in a rented boat. [gloss: how many people the boat can hold safely]	Analyze a linguistically complex mathematical story in order to model the story with an inequality while working with a partner. E.g., Fishing Adventures rents small fishing boats to tourists for day-long fishing trips. Each boat can only carry 1200 pounds of people and gear for safety reasons. Assume the average weight of a person is 150 pounds. Each group will require 200 lbs of gear for the boat plus 10 lbs of gear for each person. Create an inequality describing the restrictions on the number of people possible in a rented boat.	Analyze a linguistically complex mathematical story in order to model the story with an inequality before checking work with a partner. E.g., Fishing Adventures rents small fishing boats to tourists for day-long fishing trips. Each boat can only carry 1200 pounds of people and gear for safety reasons. Assume the average weight of a person is 150 pounds. Each group will require 200 lbs of gear for the boat plus 10 lbs of gear for each person. Create an inequality describing the restrictions on the number of people possible in a rented boat. $160p+200 \leq 1200$	

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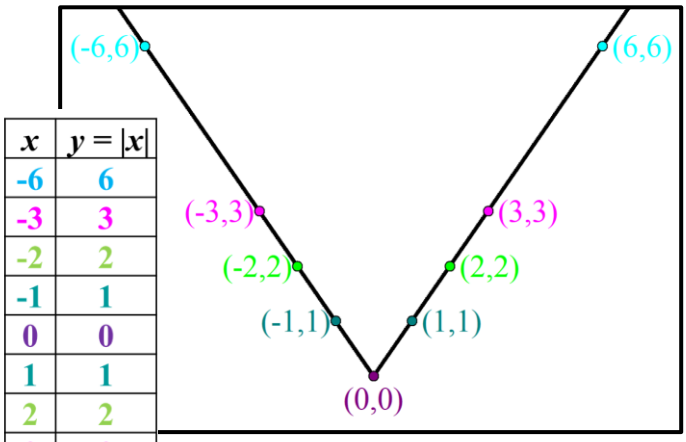
EXAMPLE CONTEXT FOR LANGUAGE USAGE: Students explain the relationship between independent values and dependent values from one of multiple representations of a function (i.e., table, graph, functional notation) for a given context. The example described in the strand below represents an activity that may occur at any point in the unit. The illustrated reference sheet is an available support and should be accessible for all students throughout the unit. During a summative assessment, the teacher may cover the illustrated reference sheet to better assess students' acquisition of both the mathematical content and language. Due to the linguistic complexity of the reading required by this task, students at lower levels of language proficiency will need supports for both reading and writing. Reading supports could include an illustrated word bank for context words, reading the task aloud to students, glossed text, and/or a full illustration of the context (see the reading supports in this unit for examples). Teachers should be aware that the relationship between two variables is not always causal and often the choice of dependent variable is arbitrary. Also, students can describe relationships using words, tables, graphs, equations, etc.

COGNITIVE FUNCTION: Students at all levels of English language proficiency **IDENTIFY** the independent and dependent values in a function and use them to **DESCRIBE** the relationship between values. EX: Let *f(x)* be the length of a paper clip chain (inches) using *x* number of paper clips. Identify the independent and dependent variables and explain the meaning of the statement *f(8)=10.*

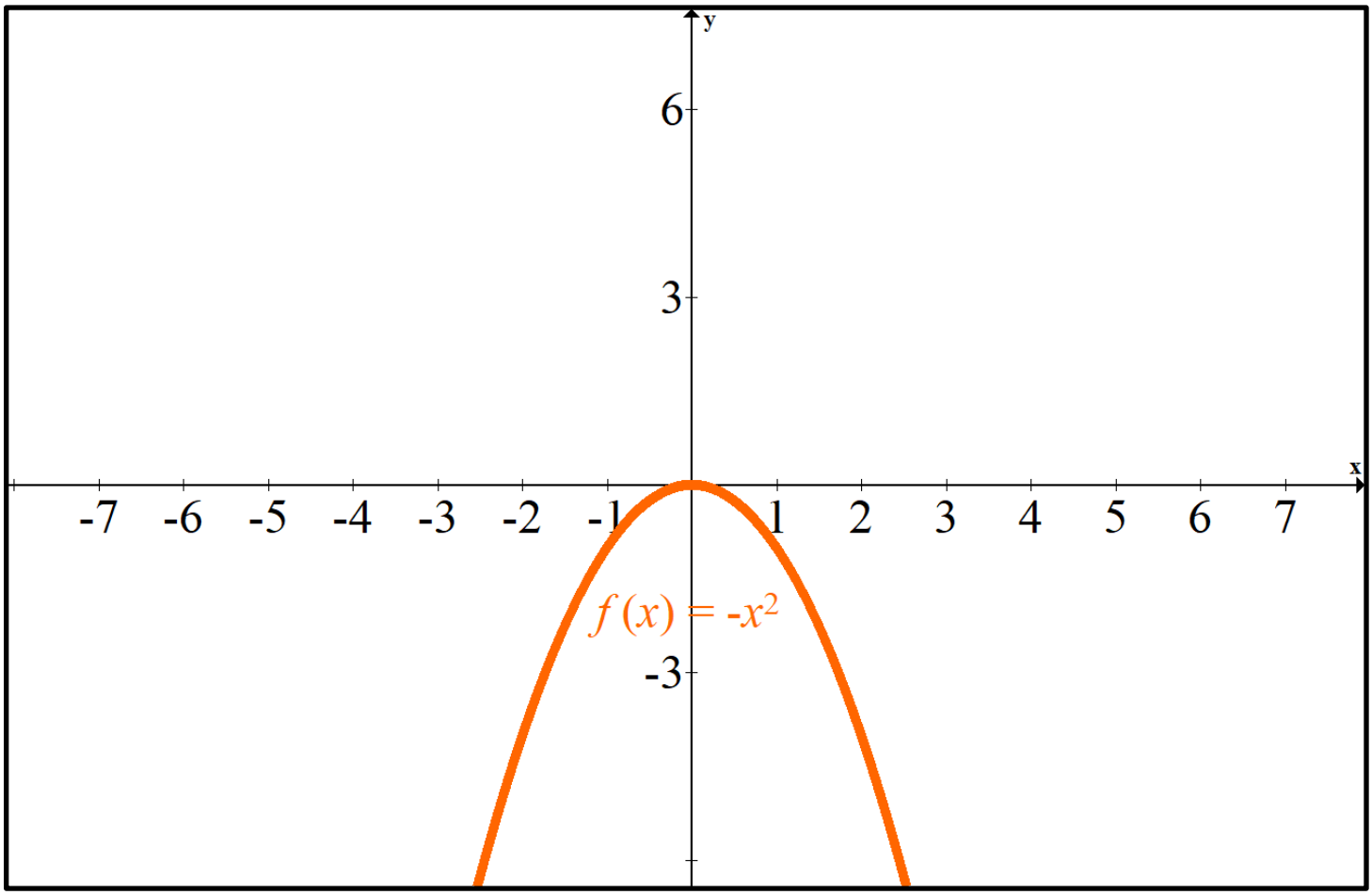
	Level 1 Entering	Level 2 Emerging	Level 3 Developing	Level 4 Expanding	Level 5 Bridging	Level 6 Reaching
Writing	In complete sentences, identify the dependent and independent variables and justify your choice by describing the relationship between the variables using a suggested word list (i.e., increase, decrease, relates, equation/graph/table, dependent, independent, variable), student- or teacher-created illustrated vocabulary reference sheet, sentence frames, and working with a partner of a higher proficiency level or in a group of mixed ability and proficiency levels. E.g., "A school's administration is planning the school buses they need for the upcoming school year. The number of buses needed depends on the number of students who live more than 1 mile away from the school." (verbal representation) **Sample response:** Dependent variable: number of ______ (buses / students). Number of _____ (buses / students) and number of ___ (buses / students) change together. ___ (more / fewer / the same) ___ (buses / students) when ___ (more / fewer /the same) ___ (buses / students).	In complete sentences, identify the dependent and independent variables and justify your choice by describing the relationship between the variables using a suggested word list (i.e., increase, decrease, relates, equation/graph/table, dependent, independent, variable), student- or teacher-created illustrated vocabulary reference sheet, sentence frames, and working with a partner of a higher proficiency level or in a group of mixed ability and proficiency levels. E.g., "A school's administration is planning the school buses they need for the upcoming school year. The number of buses needed depends on the number of students who live more than 1 mile away from the school." (verbal representation) **Sample response:** They need to know the number of ____ (buses / students) before they calculate the number of ____ (buses / students). So, the dependent variable should be the number of ______ (buses / students). A change in number of _____ (buses / students) relates to a change in number of ___ (buses / students). There are ___ (more / fewer / the same) ___ (buses / students) whenever there are ___ (more / fewer /the same) ___ (buses / students).	In complete sentences, identify the dependent and independent variables and justify your choice by describing the relationship between the variables using a suggested word list (i.e., increase, decrease, relates, equation/graph/table, dependent, independent, variable), student- or teacher-created vocabulary reference sheet, and working with a partner of a higher proficiency level or in a group of mixed ability and proficiency levels. E.g., "A school's administration is planning the school buses they need for the upcoming school year. The number of buses needed depends on the number of students who live more than 1 mile away from the school." (verbal representation) **Sample response:** The number of students is the independent variable, because the number of buses is calculated based on the number of students. The relationship between variables is that as the number of students increases, the number of buses should also increase. If there are fewer students, there should be fewer buses to save money.	In complete sentences, identify the dependent and independent variables and justify your choice by describing the relationship between the variables using a suggested word list (i.e., increase, decrease, relates, equation/graph/table, dependent, independent, variable), student- or teacher-created vocabulary reference sheet, and working with a partner of a higher proficiency level or in a group of mixed ability and proficiency levels. E.g., "A school's administration is planning the school buses they need for the upcoming school year. The number of buses needed depends on the number of students who live more than 1 mile away from the school." (verbal representation) **Sample response:** The number of students is the independent variable, because the number of buses is calculated based on the number of students. The relationship between variables is that as the number of students increases, the number of buses should also increase. If there are fewer students, there should be fewer buses to save money.	In complete sentences, identify the dependent and independent variables and justify your choice by describing the relationship between the variables using a suggested word list (i.e., increase, decrease, relates, equation/graph/table, dependent, independent, variable), student- or teacher-created vocabulary reference sheet, and working with a partner of a higher proficiency level or in a group of mixed ability and proficiency levels. E.g., "A school's administration is planning the school buses they need for the upcoming school year. The number of buses needed depends on the number of students who live more than 1 mile away from the school." (verbal representation) **Sample response:** The number of students is the independent variable, because the number of buses is calculated based on the number of students. The relationship between variables is that as the number of students increases, the number of buses should also increase. If there are fewer students, there should be fewer buses to save money.	

Absolute Value Functions: Graphs

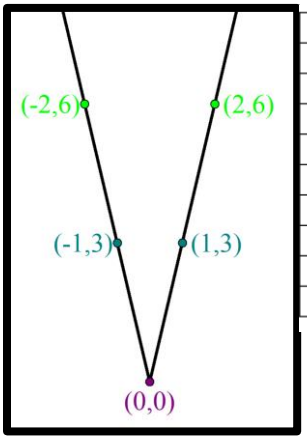
****Order of transformations matters! Compare these transformations to the next grouping.**



x	$y = \lvert x \rvert$
-6	6
-3	3
-2	2
-1	1
0	0
1	1
2	2
3	3
6	6

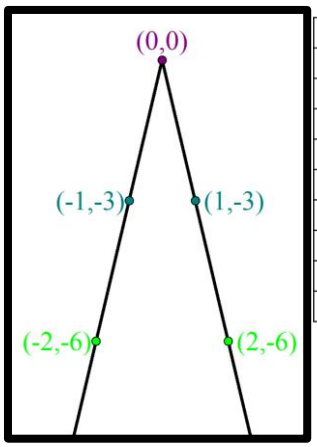


Absolute Value Functions: Graphs



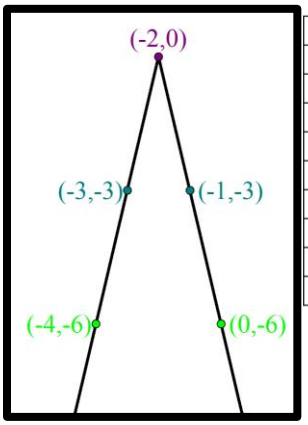
x	$y = 3\|x\|$
-6	18
-3	9
-2	6
-1	3
0	0
1	3
2	6
3	9
6	18

each ***y***-value is **3**



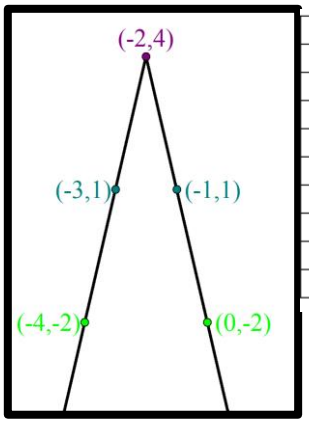
x	$y = -3\|x\|$
-6	-18
-3	-9
-2	-6
-1	-3
0	0
1	-3
2	-6
3	-9
6	-18

each ***y***-value is



x	$y = -3\|x+2\|$
-8	-18
-5	-9
-4	-6
-3	-3
-2	0
-1	-3
0	-6
1	-9
4	-18

each ***x***-value is

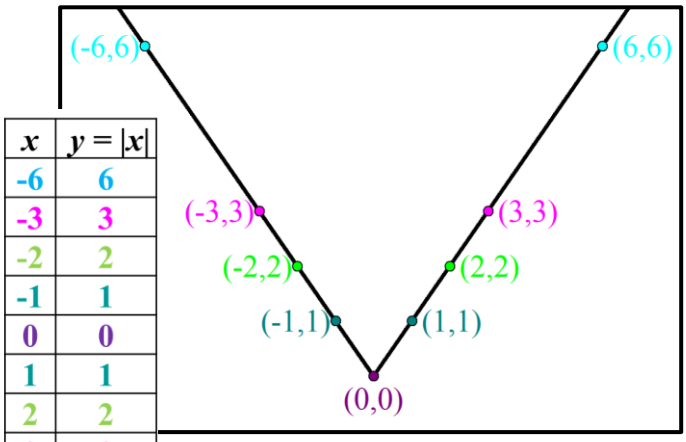


x	$y = -3\|x+2\|+4$
-8	-14
-5	-5
-4	-2
-3	1
-2	4
-1	1
0	-2
1	-5
4	-14

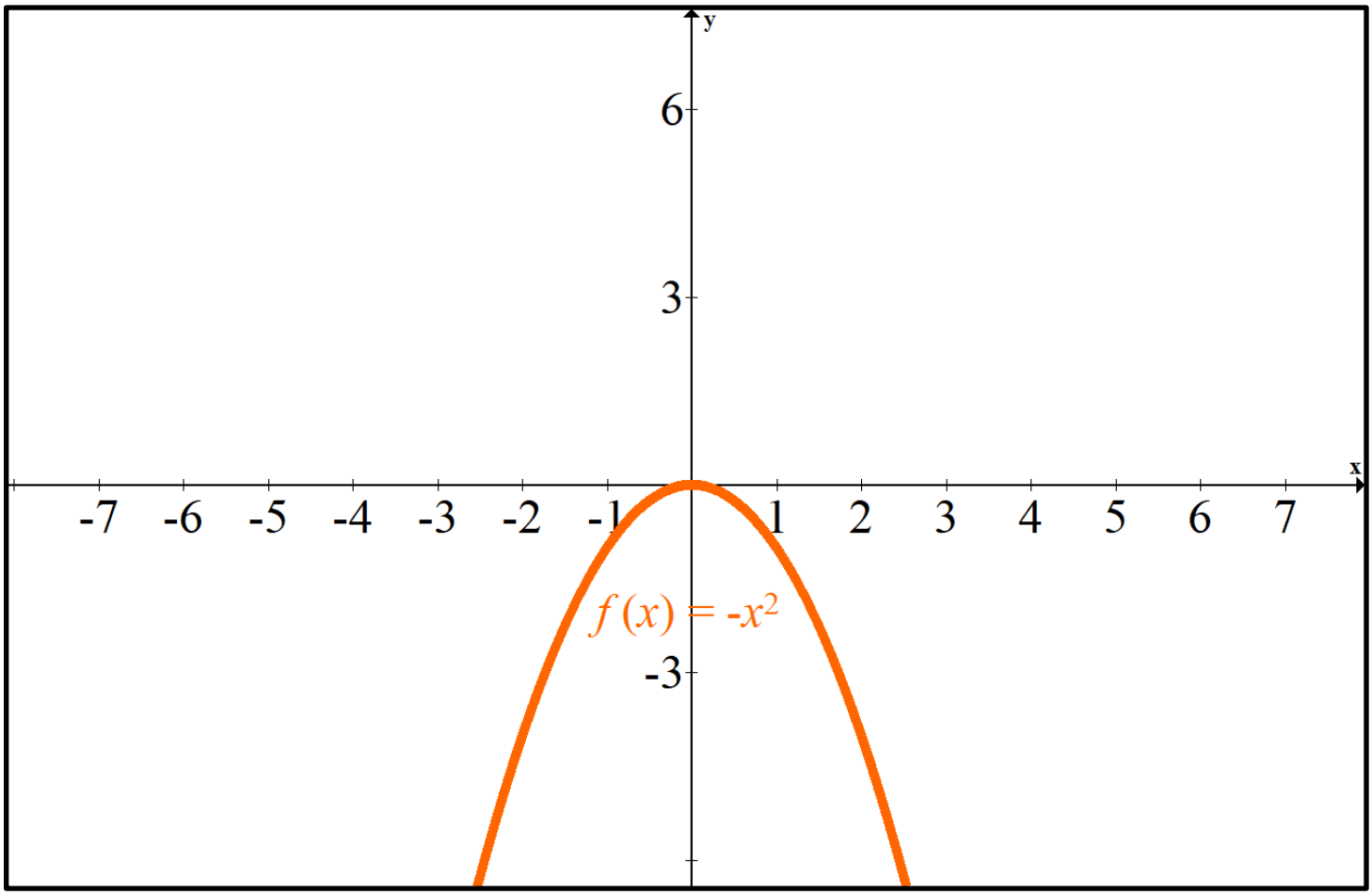
each ***y***-value is

Absolute Value Functions: Graphs

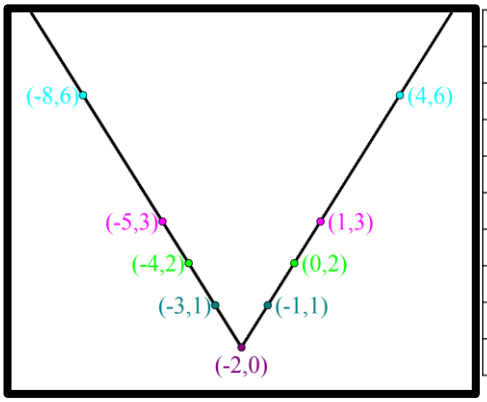
****Order of transformations matters! Compare these transformations to the previous grouping.**



x	$y = \lvert x \rvert$
-6	6
-3	3
-2	2
-1	1
0	0
1	1
2	2
3	3
6	6



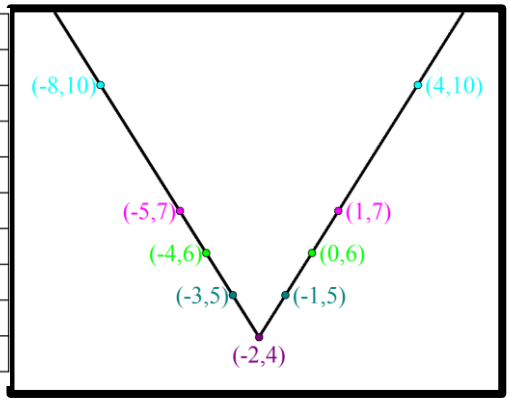
Absolute Value Functions: Graphs



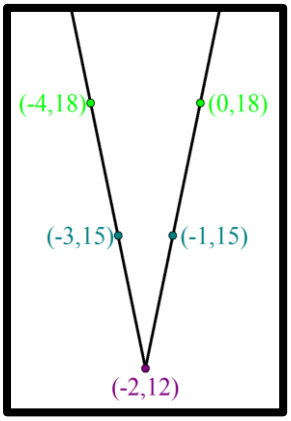
x	$y = \|x+2\|$
-8	6
-5	3
-4	2
-3	1
-2	0
-1	1
0	2
1	3
4	6

each ***x***-value is

x	$y = \|x+2\|+4$
-8	10
-5	7
-4	6
-3	5
-2	4
-1	5
0	6
1	7
4	10

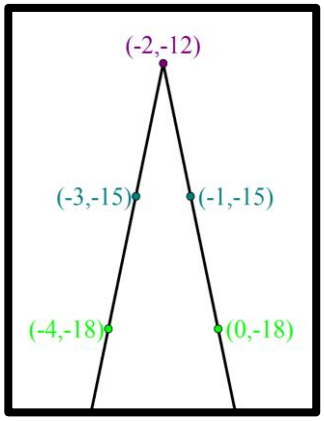


each ***y***-value is



x	$y = 3(\|x+2\|+4)$
-8	30
-5	21
-4	18
-3	15
-2	12
-1	15
0	18
1	21
4	30

each ***y***-value is **3**

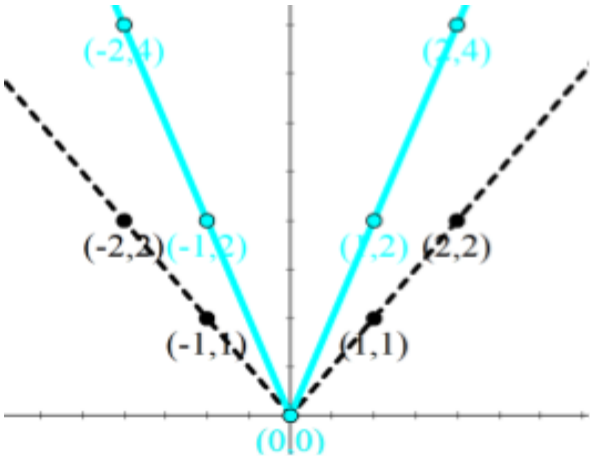


x	$y = -3(\|x+2\|+4)$
-8	-30
-5	-21
-4	-18
-3	-15
-2	-12
-1	-15
0	-18
1	-21
4	-30

each ***y***-value is

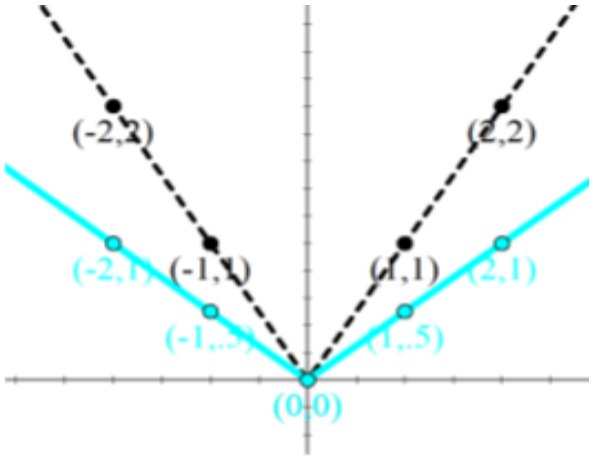
$$f(x) = \pm a\,|\,x - b\,| + c$$

Vertical Stretch



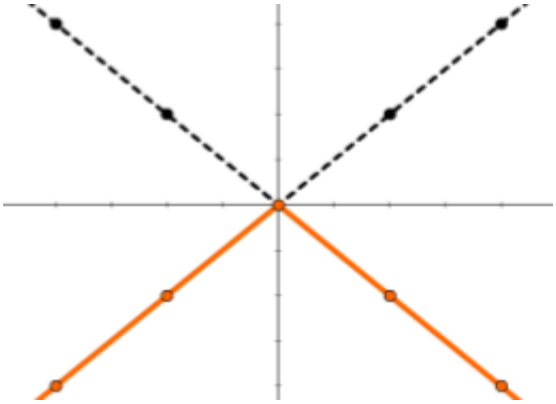
multiply by 2

Vertical Shrink



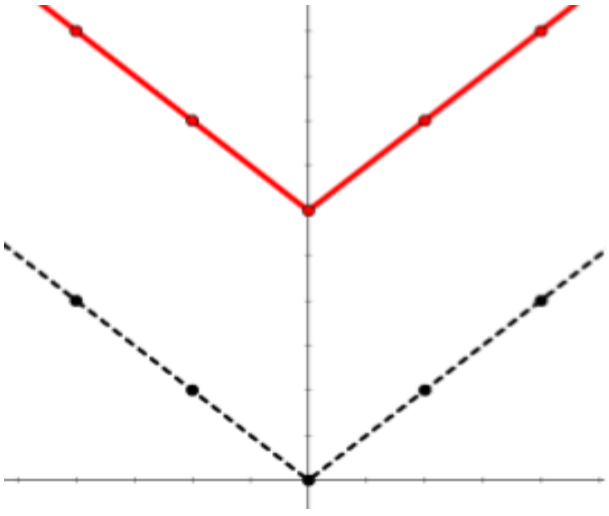
divide by 2

Reflection in the *x*-axis

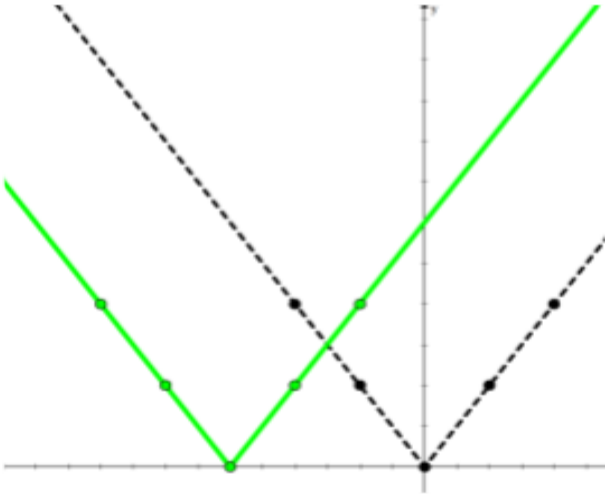


Translation (shift)

Vertical

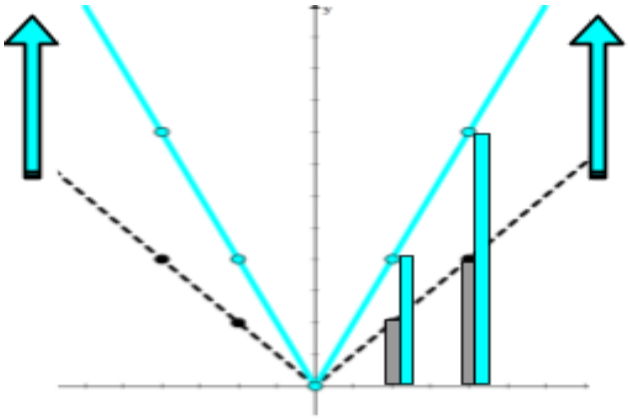


Horizontal



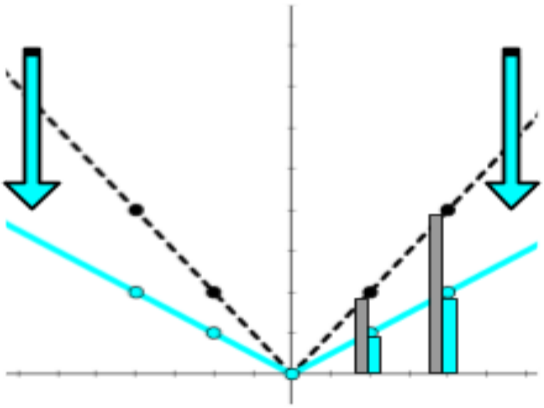
$$f(x) = \pm a\,|\,x - h\,| + k$$

Vertical Stretch



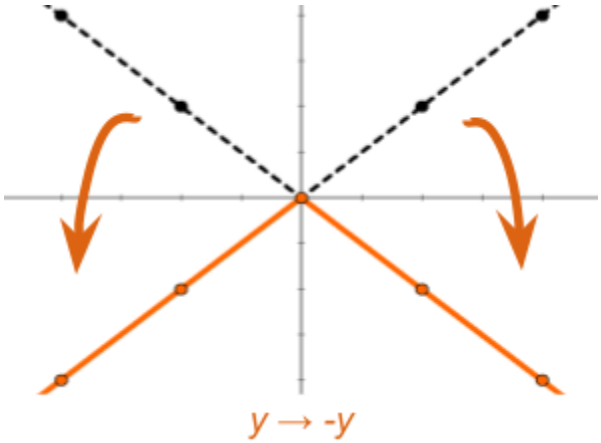
multiply by 2
(double height)

Vertical Shrink



divide by 2
(half height)

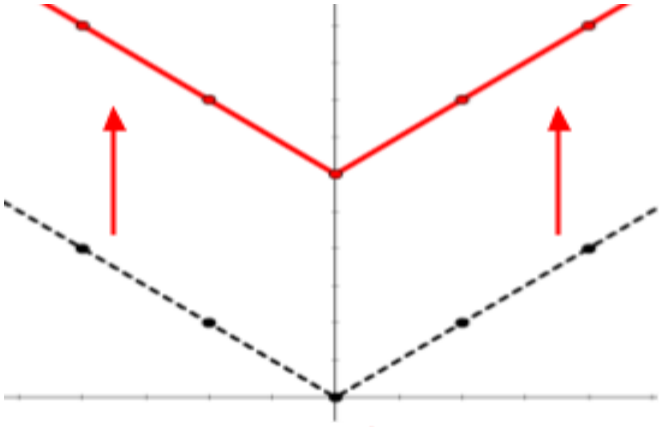
Reflection in the *x*-axis



$y \rightarrow -y$

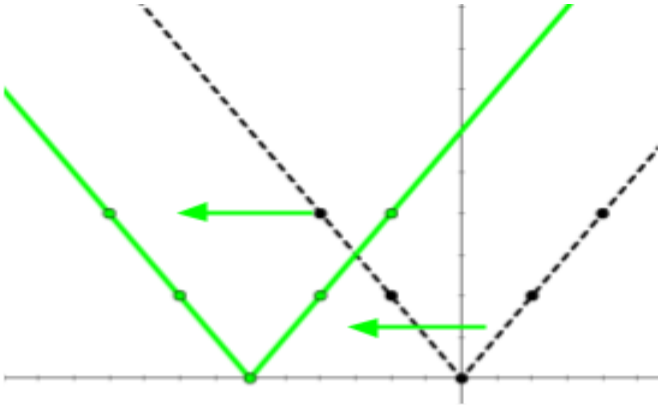
Translation (shift)

Vertical



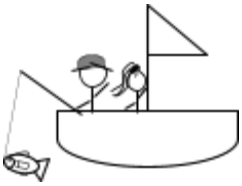
$y \rightarrow y + k$

Horizontal



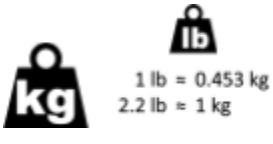
$x \rightarrow x + h$

lends for money

Fishing Adventures rents small fishing boats 

visiting people

to tourists for day-long fishing trips.

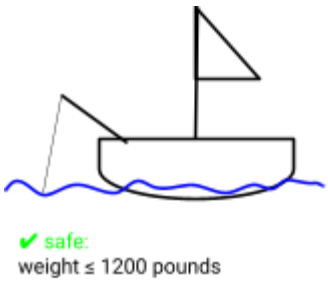


hold

Each boat can only carry 1200 pounds of people and

things

gear for safety reasons.

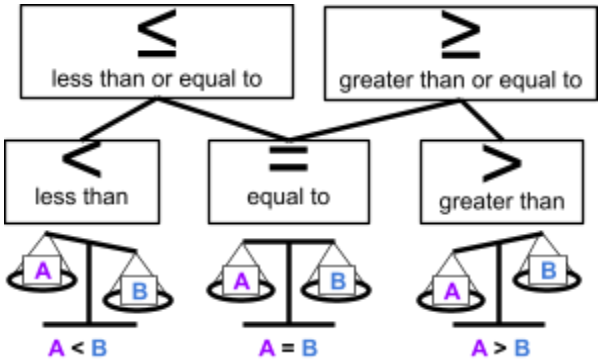


Assume the average weight of a person is 150 pounds.

need

Each group will require 200 lbs of gear for the boat

plus 10 lbs of gear for each person.



write limits

Create an inequality describing the restrictions on the

how many people the boat can hold safely

number of people possible in a rented boat.

lends for money visiting people

Fishing Adventures rents small fishing boats to tourists

for day-long fishing trips.

hold

Each boat can only carry 1200 pounds of people and

things

gear for safety reasons.

Assume the average weight of a person is 150 pounds.

need things

Each group will require 200 lbs of gear for the boat

things

plus 10 lbs of gear for each person.

write limits

Create an inequality describing the restrictions on the

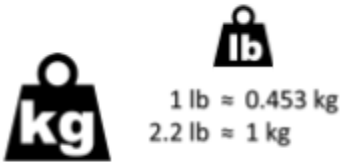
how many people the boat can hold safely

number of people possible in a rented boat.

fishing boat

weight

pound vs. kilogram



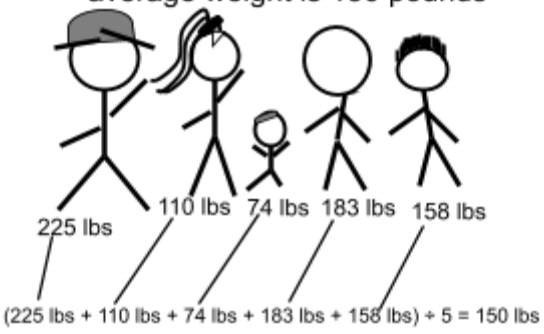
gear for boat:

gear for person

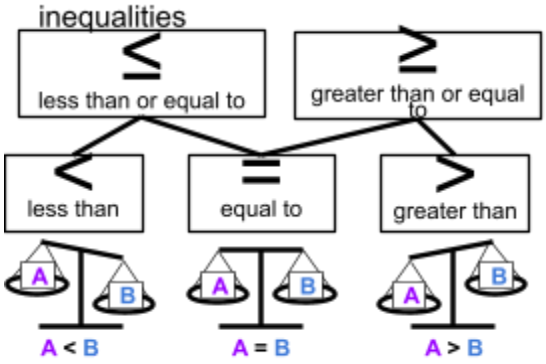
person

people

average weight is 150 pounds



inequalities



safety reasons

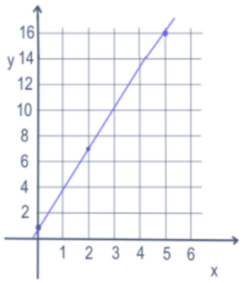
✔ safe: weight ≤ 1200 pounds

✘ not safe: weight > 1200 pounds

Algebra1_Unit 2_Reading_Real WorldInequalitiesIllustratedWord Bank

fishing boat: http://tinyurl.com/jnt5cay
tackle box: http://tinyurl.com/hnhyy8w
fishing pole: https://tinyurl.com/y4fyhkov
net and tackle: https://tinyurl.com/y58z2ub6
safety vest: http://tinyurl.com/hnhyy8w
anchor: https://tinyurl.com/y6f8sa49
first aid kit: https://tinyurl.com/y6qh3g84
marine radio: https://tinyurl.com/y4gtncws
marine fire extinguisher: https://tinyurl.com/y5d9co4d
weight / pounds: https://commons.wikimedia.org/wiki/File:400x400px-pounds_weight.svg
other images created with Google Drawings

Algebra Unit 2 Writing Illustrated Reference Sheet

linear equation	$y = mx + b$ $ax + by = c$
table	x | y 0 | 5 2 | 4 4 | 3
graph	

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