Unit 6 Lesson 1

ART AVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

218

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

Complete one column of the table with prices where popcorn is priced at a constant rate. That is, the amount of popcorn is proportional to the price of the bag. Then complete the other column with realistic example prices where the amount of popcorn and price of the bag are not in proportion.

volume of popcorn (ounces)	price of bag, proportional ($)	price of bag, not proportional ($)
10	6	6
20		
35		
48		

what two things are true about proportional relationships?

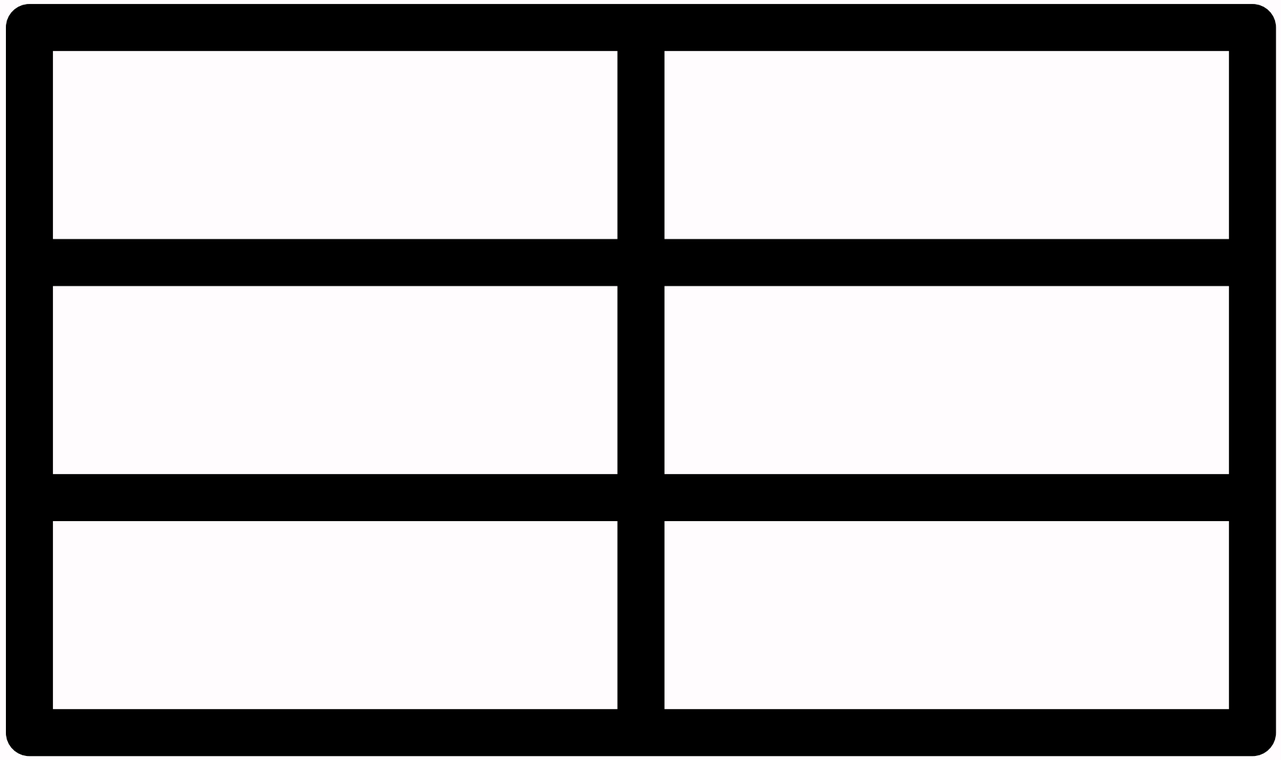
A state park charges an entrance fee based on the number of people in a vehicle. A car containing 2 people is charged $14, a car containing 4 people is charged $20, and a van containing 8 people is charged $32.

People and cost	total
vehicle	

is this a proportional relationship?

how can we determine the rule the state park uses?

A toaster has 4 slots for bread. Once the toaster is warmed up, it takes 35 seconds to make 4 slices of toast, 70 seconds to make 8 slices, and 105 seconds to make 12 slices.



is this a proportional relationship?

how can we determine the time one slice of toast will take?

Morrison After Lunch

1. Go Directly to your assigned seat.
2. Distribute papers: CR Packet and Cool Down.
3. Complete BOTH headings. Park your pencil and wait for next direction. DO NOT start cool down.

Lesson Synthesis

The goal of this lesson is to recognize that there are situations in the world that are more complicated than what we have studied until this point. (COP)

This unit is about developing tools to solve some more sophisticated problems.

Cool Down

A movie theater sells popcorn in bags of different sizes. The table shows the volume of popcorn and the price of the bag.

If the theater wanted to offer a 60-ounce bag of popcorn, what would be a good price? Explain your reasoning.

volume of popcorn (ounces)	price of bag ($)
10	6
8	
	13.6

Below the table, answer:

1. Is this a proportional relationship? Explain how you know using details to support your answer.
2. Can you determine the rule the movie theater uses to charge for popcorn.

Unit 6 Lesson 2

1ST AVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculato**
4. **Open workbook t**
page:

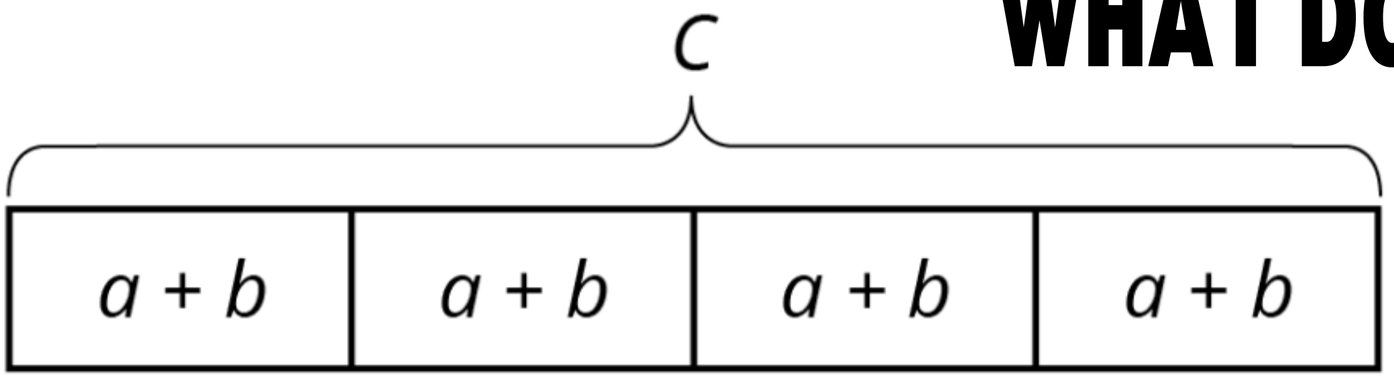
HOW TO DO IT

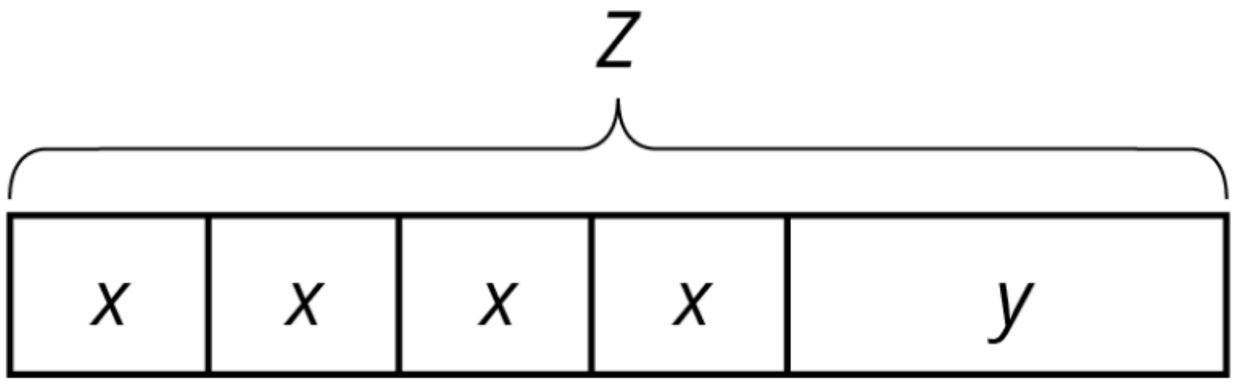
- You should not earn an IPI during this time.
- Volume = Indoor Level
- ith urgency, be eady before timer!
- you have a job,

222

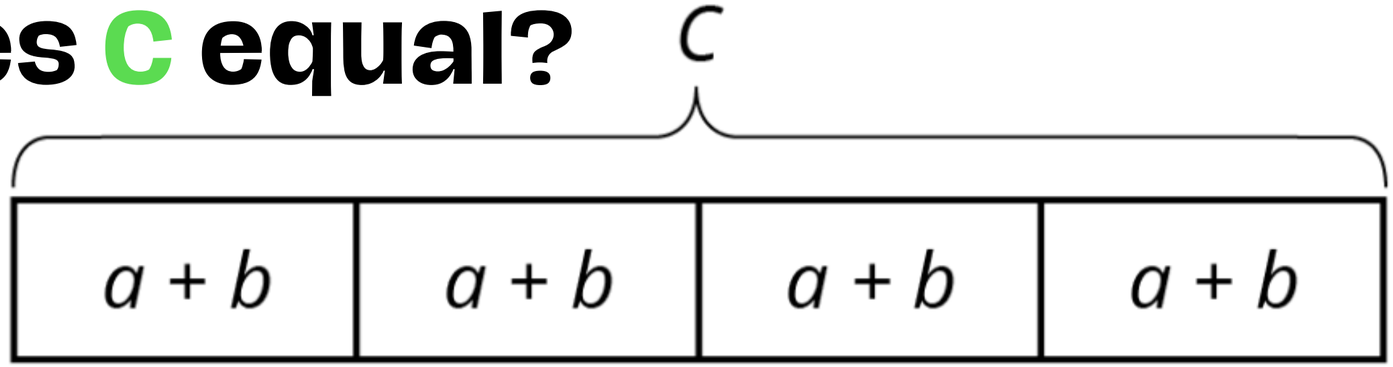
WHAT DO YOU NOTICE?

WHAT DO YOU WONDER?

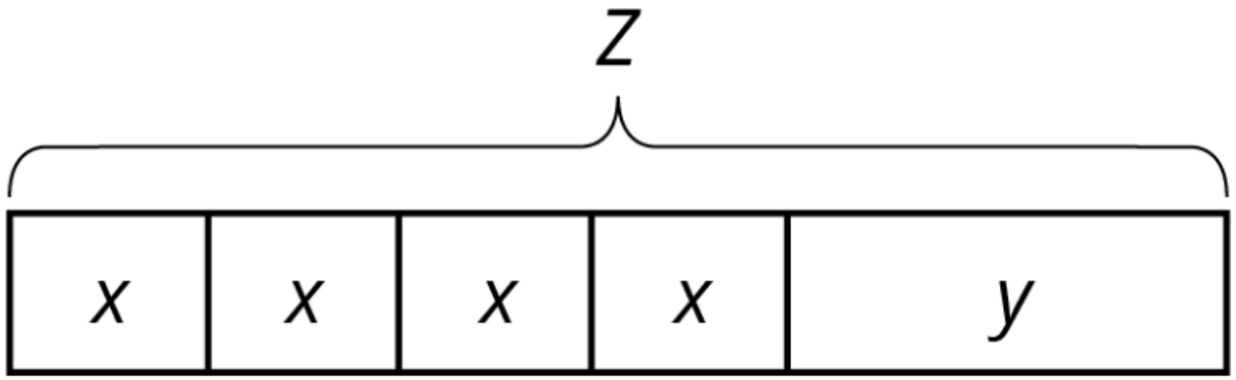




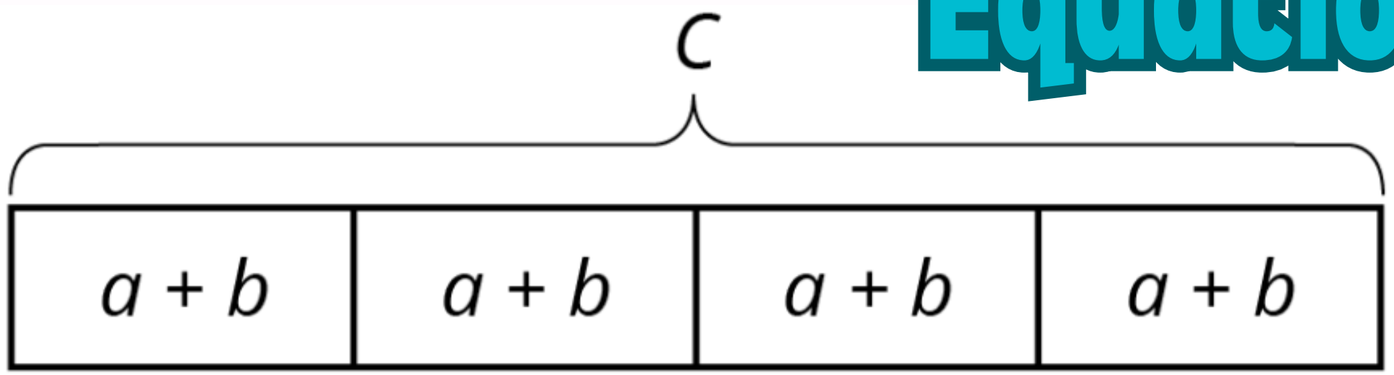
2) If I substitute values for A and B, what does C equal?

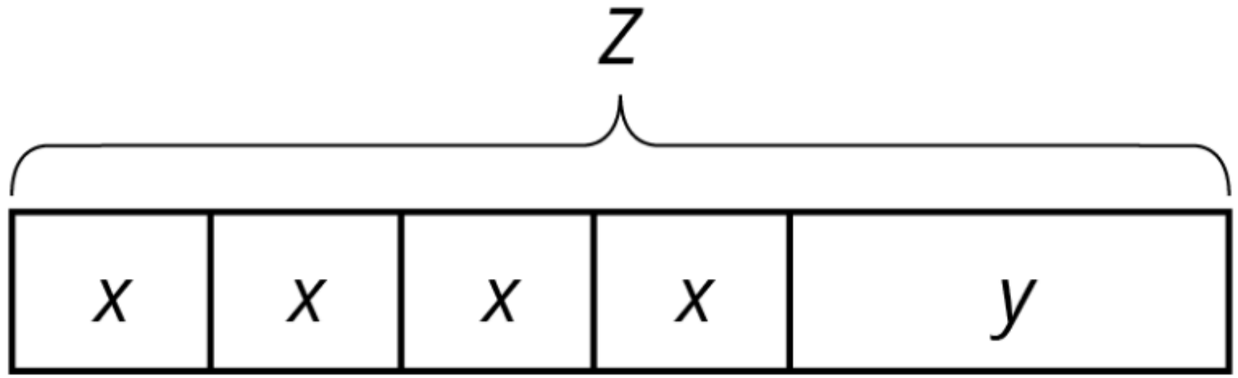


If I substitute values for X and Y, what does Z equal?



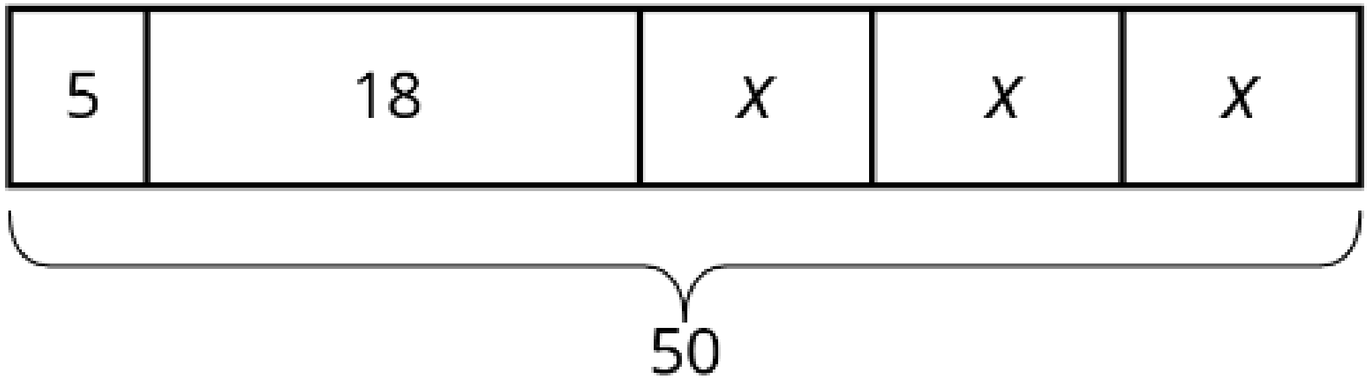
Equations that match:





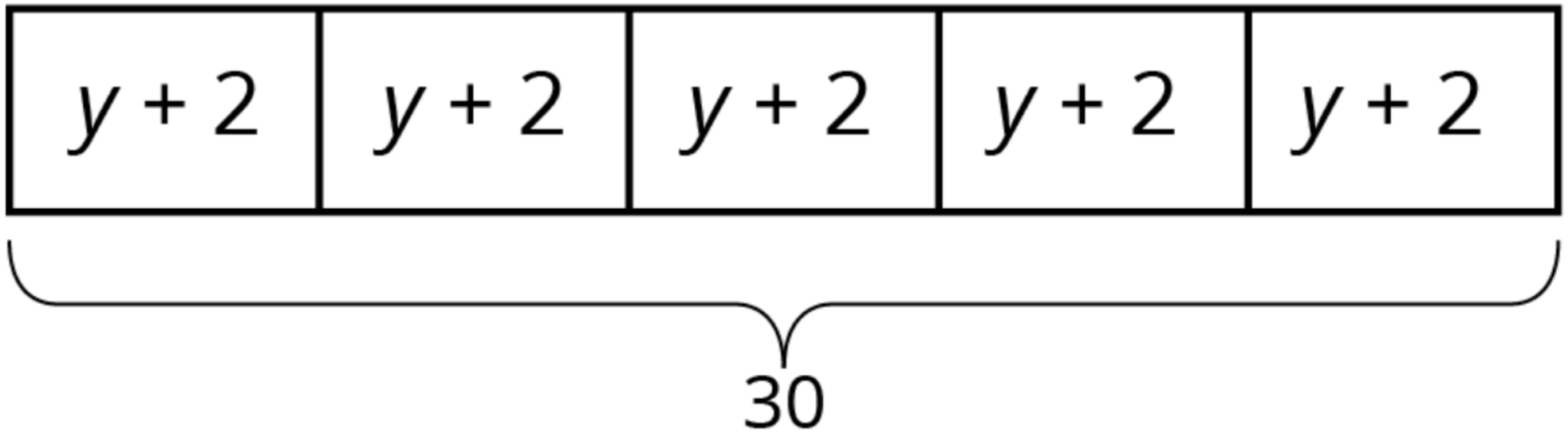
2.2

1) Mai made 50 flyers for five volunteers in her club to hang up around school. She gave 5 flyers to the first volunteer, 18 flyers to the second volunteer, and divided the remaining flyers equally among the three remaining volunteers.



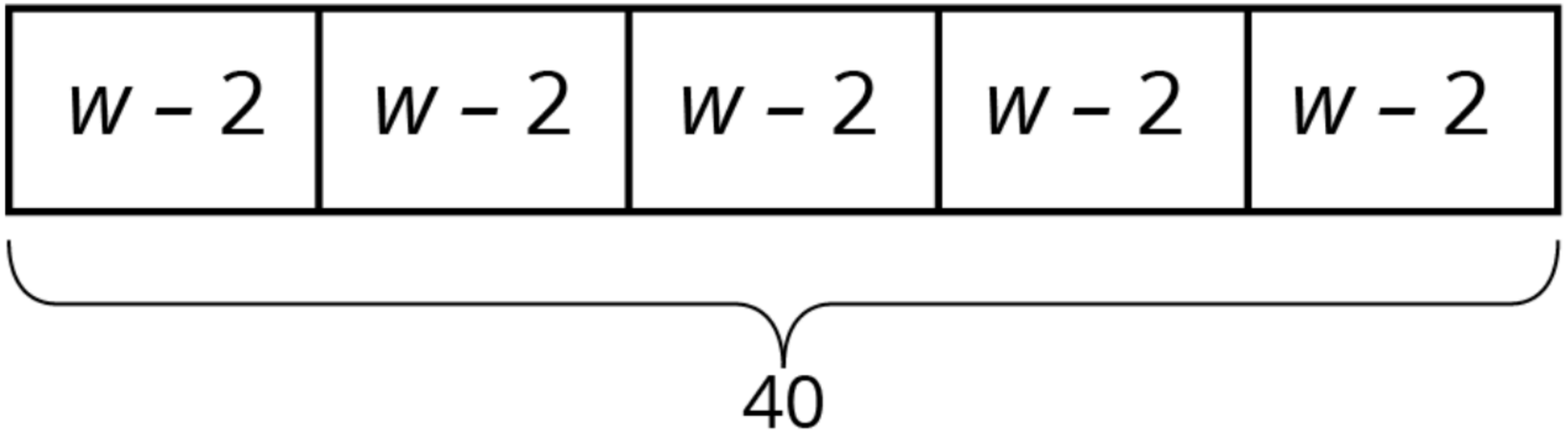
- **what does each part of the tape diagram represent?**
- **Write the equation that matches this tape diagram**

2. To thank her five volunteers, Mai gave each of them the same number of stickers. Then she gave them each two more stickers. Altogether, she gave them a total of 30 stickers.



- **what does each part of the tape diagram represent?**
- **Write the equation that matches this tape diagram**

3. Mai distributed another group of flyers equally among the five volunteers. Then she remembered that she needed some flyers to give to teachers, so she took 2 flyers from each volunteer. Then, the volunteers had a total of 40 flyers to hang up.



- **what does each part of the tape diagram represent?**
- **Write the equation that matches this tape diagram**

How did the diagrams help you find the value of the unknown quantities?

2.3

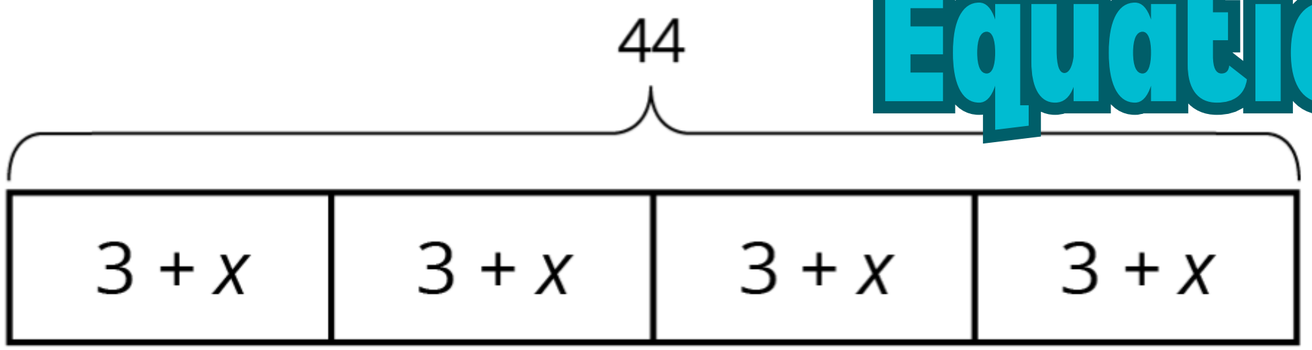
1) Noah and his sister are making gift bags for a birthday party. Noah puts 3 pencil erasers in each bag. His sister puts x stickers in each bag. After filling 4 bags, they have used a total of 44 items.

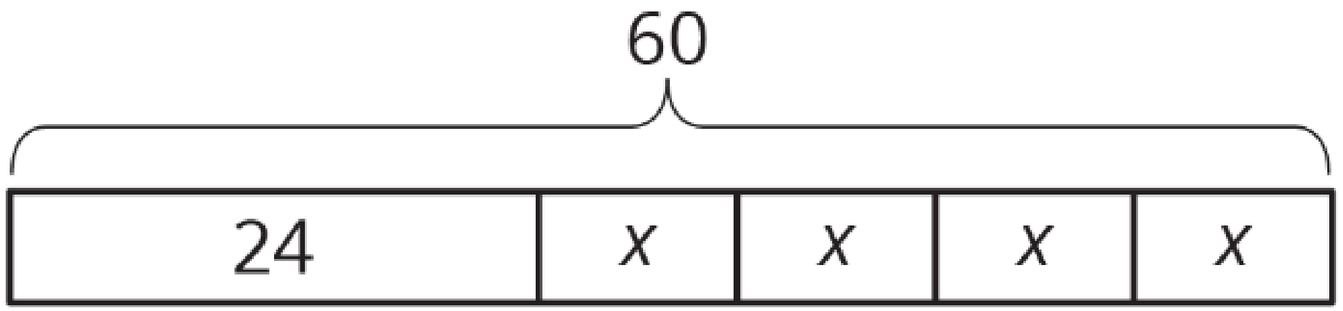
- **what does each part of the tape diagram represent?**
- **Write the equation that matches this tape diagram**

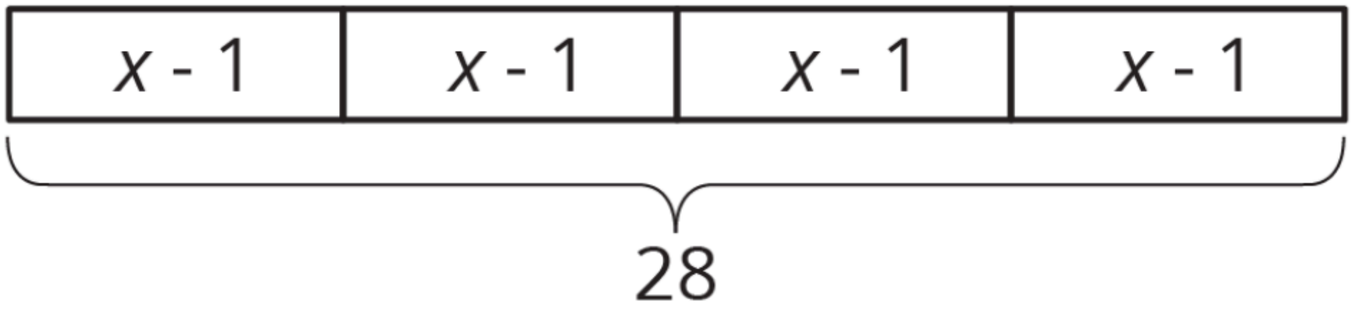
2. Noah’s family also wants to blow up a total of 60 balloons for the party. Yesterday they blew up 24 balloons. Today they want to split the remaining balloons equally between four family members.

3. Noah's family bought some fruit bars to put in the gift bags. They bought one box each of four flavors: apple, strawberry, blueberry, and peach. The boxes all had the same number of bars. Noah wanted to taste the flavors and ate one bar from each box. There were 28 bars left for the gift bags.

Equations that match:







Morrison After Lunch

1. Go Directly to your assigned seat.
2. Distribute papers: CR Packet and Cool Down.
3. Complete BOTH headings. Park your pencil and wait for next direction. DO NOT start cool down.

Lesson Synthesis

what do tape diagrams show us:

a. A total amount is indicated.
b. Pieces that represent equal amounts are the same length (or roughly the same length, if sketching by hand).
c. Pieces that represent different amounts are not the same length.
d. Pieces are labeled with either their amounts, a variable representing an unknown amount, or an expression like x+1 to mean “1 more than the unknown amount.”

Cool Down

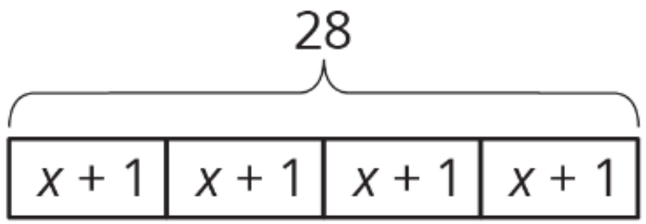
Here is a story: Lin bought 4 bags of apples. Each bag had the same number of apples. After eating 1 apple from each bag, she had 28 apples left.

1. Which diagram best represents the story? Explain why the diagram represents it.

2. What part of the story does x represent?

3. Describe how you would find the unknown amount in the story.

A



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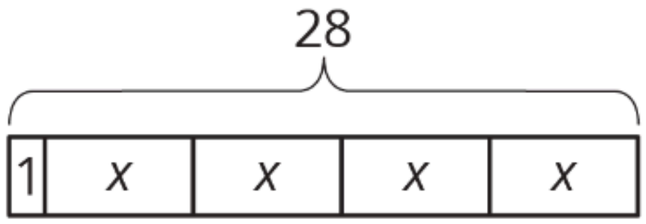

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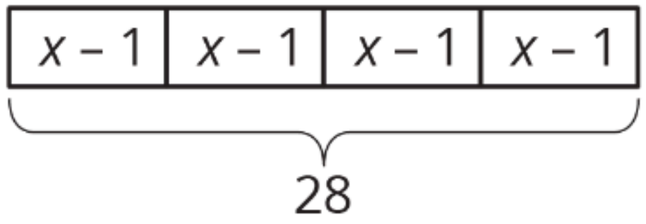


More At Bats

Complete the heading for your CR packet. Remember all CR packets can be turned in for a grade replace.

today's focus:

Distributive Property mashupmath

$3(8+2)$

$3 \cdot 8 + 3 \cdot 2$

$4(x+3)$

$= 4x + 12$

the sign stays "married" to the number (x-3), I interpret that as x and -3

Unit 6 Lesson 3

FIRST FIVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook page:** **228**

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

brief announcements:

grades are in progress!
thank you for your patience
:) all revisions will be
accounted for, especi
before PRN.

3.1 Warm Up

two for one!
practicing:

- multiple option multiple choice
- distributive property

Select **all** the expressions that are equivalent to $7(2-3n)$. Explain how you know each expression you select is equivalent.

1. $9-10n$
2. $14-3n$
3. $14-21n$
4. $(2-3n)\cdot 7$
5. $7\cdot 2\cdot(-3n)$

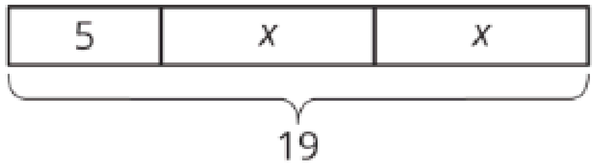
- **prove/disprove EACH multiple choice option**
- **simplify each expression as much as possible before comparing.**

3.2

- **write your own equation to match each tape diagram**
- **identify which equations are equivalent to yours/match the tape diagram**

1. Match each equation to one of the tape diagrams. Be prepared to explain how the equation matches the diagram.

A



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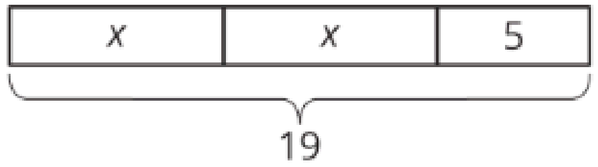

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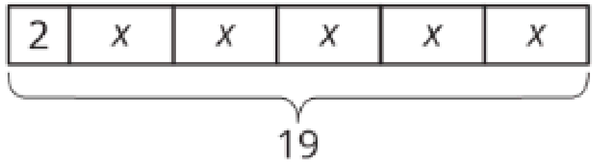

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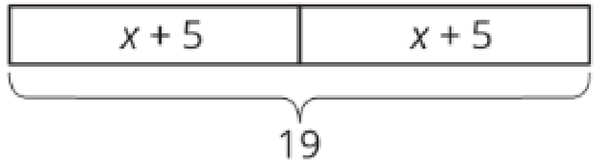
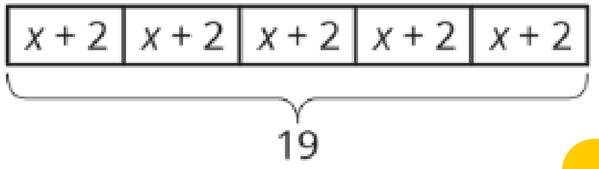


E



is it adding parts or groups? total?

vocab

equivalent expressions

Equivalent expressions are always equal to each other. If the expressions have variables, they are equal whenever the same value is used for the variable in each expression.

For example, $3x + 4x$ is equivalent to $5x + 2x$. No matter what value we use for x, these expressions are always equal. When x is 3, both expressions equal 21. When x is 10, both expressions equal 70.

3.3

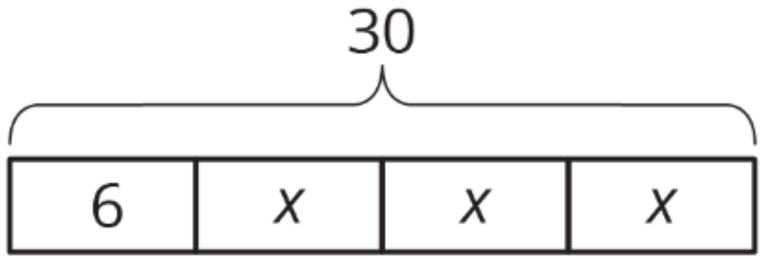
1. Draw a tape diagram to match each equation
2. Solve for x and solve for y?

- $114 = 3x + 18$ **adding parts**
- $114 = 3(y + 18)$ **grouping**

Lesson Synthesis

- Multiplication in the equation is represented with multiple copies of the same piece in the diagram.
- The total amount is shown in both the equation and the diagram.
- An unknown amount is represented with a variable.
- Either the equation or the diagram can be used to reason about a solution to the equation.

Cool Down



1. Circle the equation that the diagram does *not* match.

- $6 + 3x = 30$
- $3(x + 6) = 30$
- $3x = 30 - 6$
- $30 = 3x + 6$

total?
groups?
is it adding parts or grouping?

2. Draw a diagram that matches the equation yo

Unit 6 Lesson 4

FIRST FIVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

234

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

3.1 Warm Up

1. $x + 1 = 5$

2. $2(x + 1) = 10$

3. $3(x + 1) = 15$

4. $500 = 100(x + 1)$

1. Solve for the value of X.
2. Show your work.

- What do you notice about the solutions?
- What operations are in the equation?
- What operations did you use to solve?

4.2 for this activity each question must have the following:

- tape diagram

- equation

$$y=ax+b$$

- solve for the variable: $c=x$
- explain what the answer means in the CONTEXT

lesson 4 practice problems

- A family buys 6 tickets to a show. They also pay a $3 parking fee. They spend $27 to see the show.

turn to page

238

4.3 for this activity each question must have the following:

- tape diagram

- equation

$y=ax+b$

- solve for the variable: $c=x$

- explain what the answer means in the CONTEXT

$7x+9=30$

Diego has 7 packs of markers. Each pack has x markers in it. After Lin gives him 9 more markers, he has a total of 30 markers.

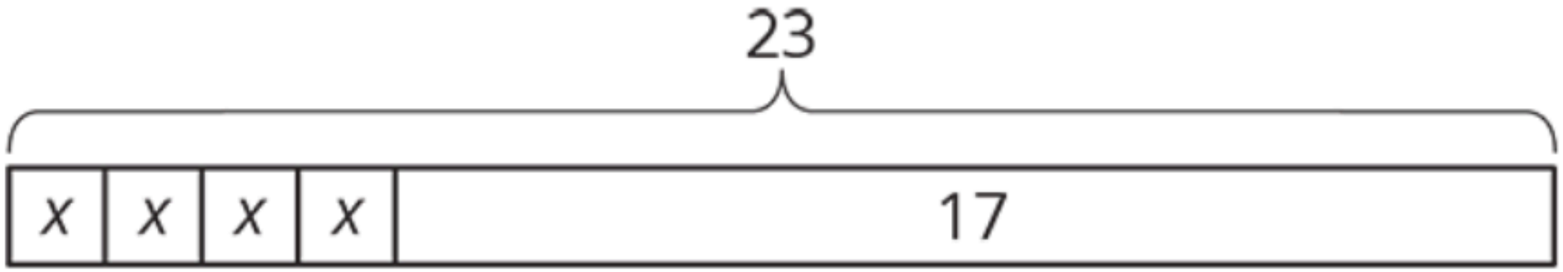
What does each number and letter in the equation represent in the situation?

What is the reason for each operation (multiplication or addition) used in the equation?

What is the solution to the equation? What does it mean to be a solution to an equation? What does the solution represent in the situation?

Cool Down

Here is a diagram and its corresponding equation. Find the solution to the equation and explain your reasoning.



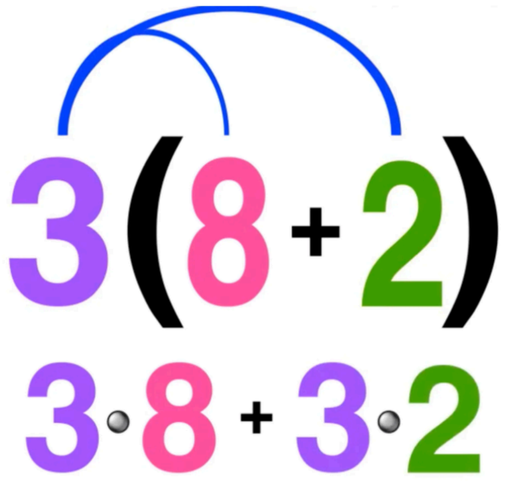
$4x + 17 = 23$

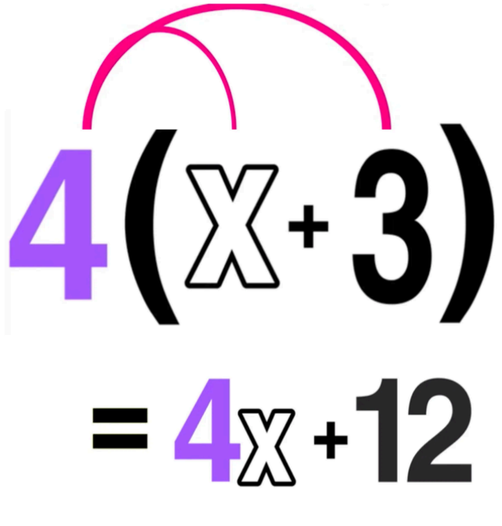
More At Bats

Complete the heading for your CR packet. Remember all CR packets can be turned in for a grade replace.

today's focus:

Distributive Property mashupmath





the sign stays "married" to the number (x-3), I interpret that as x and -3

Unit 6 Lesson 5

FIRST FIVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page: 240**

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

3.1 Warm Up

$$x - 1 = 5$$

$$2(x - 1) = 10$$

$$3(x - 1) = 15$$

$$500 = 100(x - 1)$$

1. Solve for the value of X.
2. Show your work.

- What do you notice about the solutions?
- What operations are in the equation?
- What operations did you use to solve?

1. Return to page 234 (yesterday's warm up)
2. Compare today and yesterday's equations with your seat partner. Ask each other:
    a. What operations changed?
    b. How did that change how you solved the equations today?

5.2 for this activity each question must have the following:

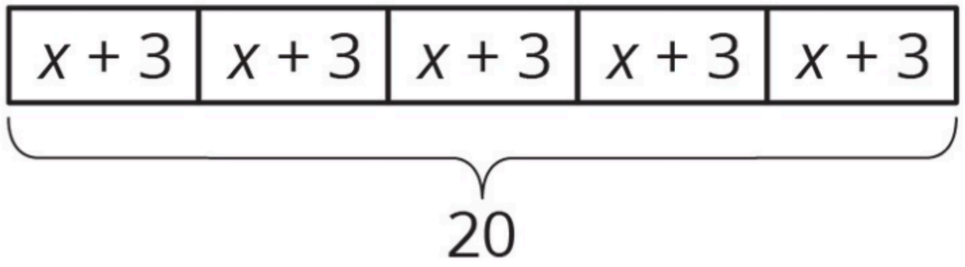
- tape diagram

- equation

$$y=ax+b$$

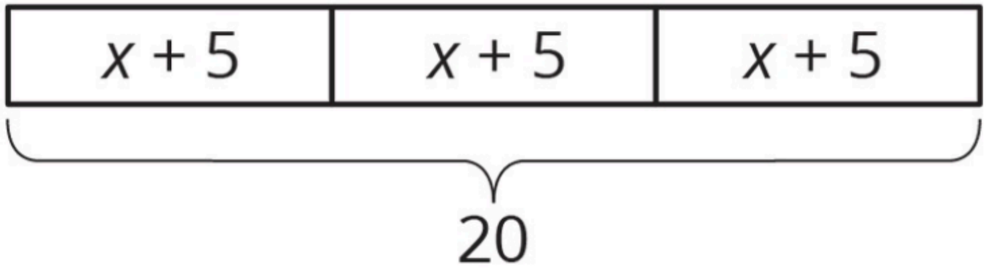
- solve for the variable: $c=x$
- explain what the answer means in the CONTEXT

A



$$(x + 3) \cdot 5 = 20$$

B



$$3(x + 5) = 20$$

lesson 5 practice problems

grouping practice #3

turn to page

244

5.3 for this activity each question must have the following:

- tape diagram

- equation

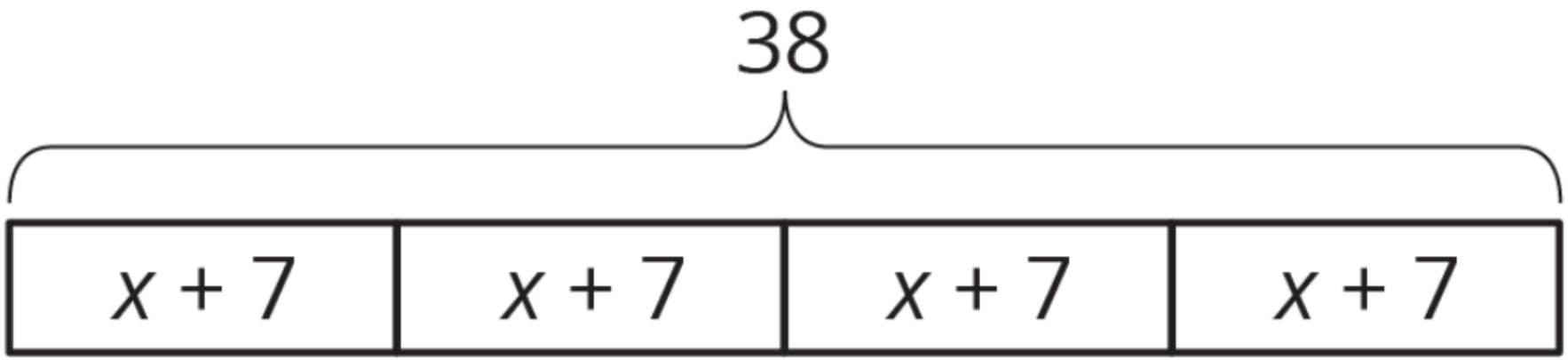
$y=ax+b$

- solve for the variable: $c=x$

- explain what the answer means in the CONTEXT

Cool Down

Here is a diagram and its corresponding equation. Find the solution to the equation and explain your reasoning.



$$4(x + 7) = 38$$

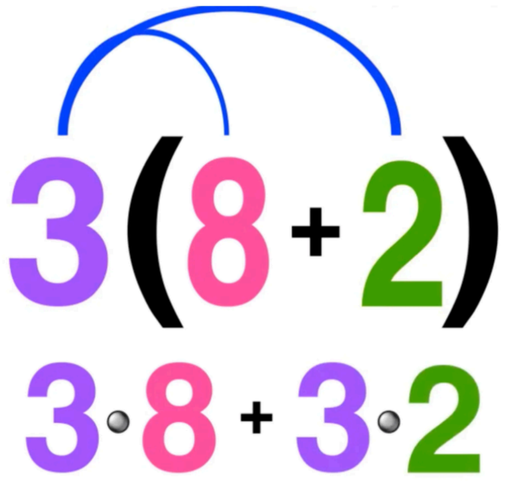
solve for the value of X. bonus point to write a situation that matches this tape diagram.

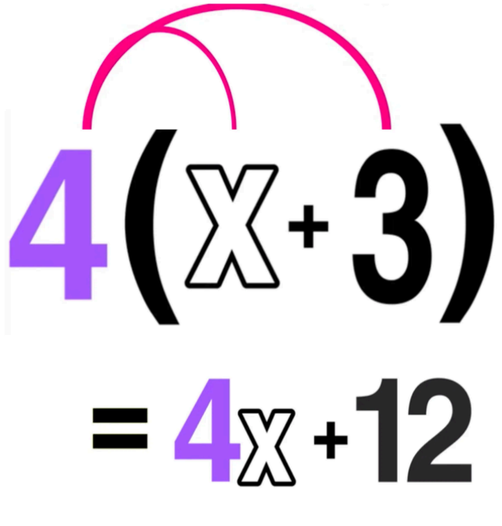
More At Bats

Complete the heading for your CR packet. Remember all CR packets can be turned in for a grade replace.

today's focus:

Distributive Property mashupmath





the sign stays "married" to the number (x-3), I interpret that as x and -3

Unit 6 Lesson 6

FIRST FIVE MINUTES

WHAT TO DO

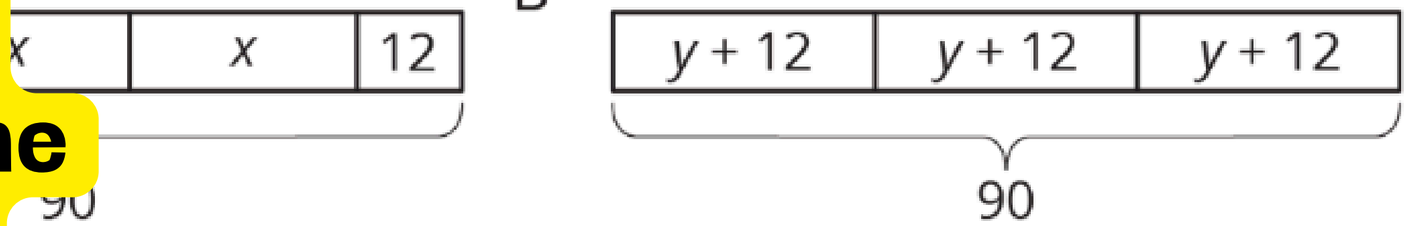
1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **JUST PACKET and CHEAT SHEET**

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

read the stories, examine the tape diagrams. determine which match and explain how you know.

B



rs to hang up around the school. She gave 12 flyers to each of three
e remaining flyers and divided them up equally between the
three volunteers.

Story 2: Lin had 90 flyers to hang up around the school. After giving the same number of flyers to each of three volunteers, she had 12 left to hang up by herself.

1. Which diagram goes with which story? Explain your reasoning.

Story _____ matches Diagram _____ because:

Story _____ matches Diagram _____ because:

2. In each diagram, what part of the story does the variable represent?

in context

X represents:

Y represents:

3. Write an equation corresponding to each story. If you get stuck, use the diagram.

Equation for Story 1:

Equation for Story 2:

4. Find the value of the variable in the story.

Story 1:

Story 2:

your practice problems should have

- tape diagram

- equation

$y=ax+b$

- solve for the variable: $c=x$
- explain what the answer means in the CONTEXT

Morrison After Lunch

1. Go Directly to your assigned seat.
2. Take your paket back out
3. Turn to Distributive property page

1ST AVE MINUTES

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open Chromebook and sign into iReady.**

1. **On iReady, go to the Math section.**
2. You should see lessons assigned! Please click there and begin.
3. **LET ME KNOW if you do not see any assignments posted.**
4. **Headphones yes, music no**

Unit 6 Lesson 7

ARST AVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook page:** **250**

HOW TO DO IT

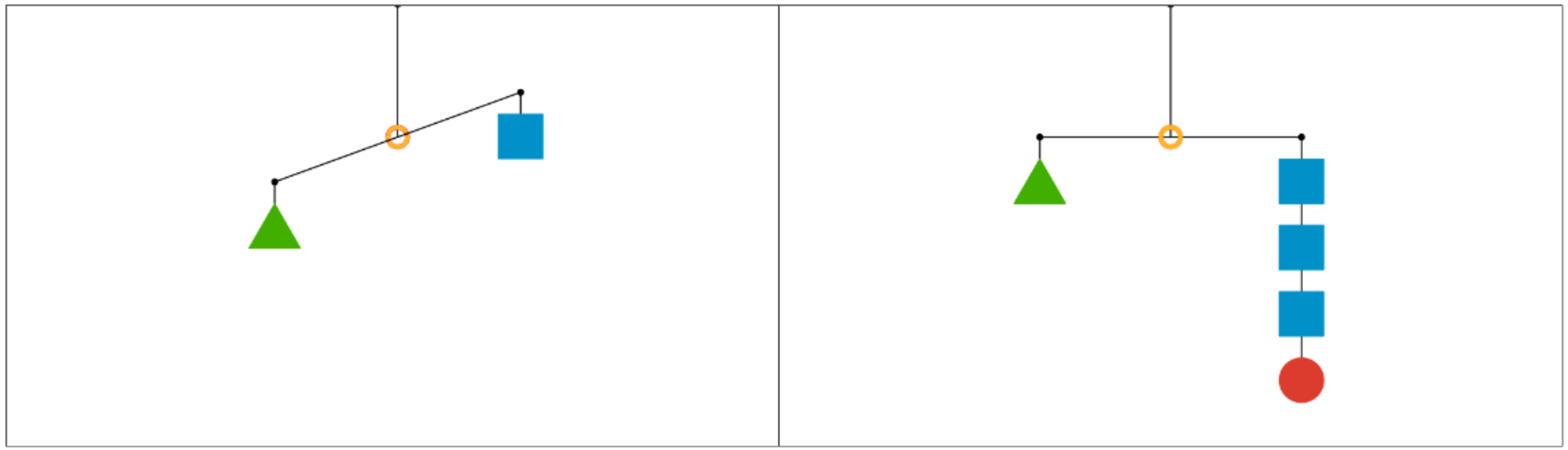
- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

warm up:

In the two diagrams, all the triangles weigh the same and all the squares weigh the same.

For each diagram, come up with . . .

1) One thing that *must* be true
2) One thing that *could* be true
3) One thing that *cannot possibly* be true



page set up:

diagram 1

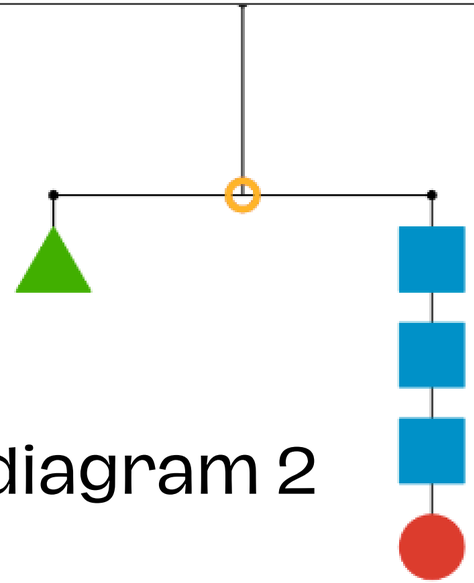


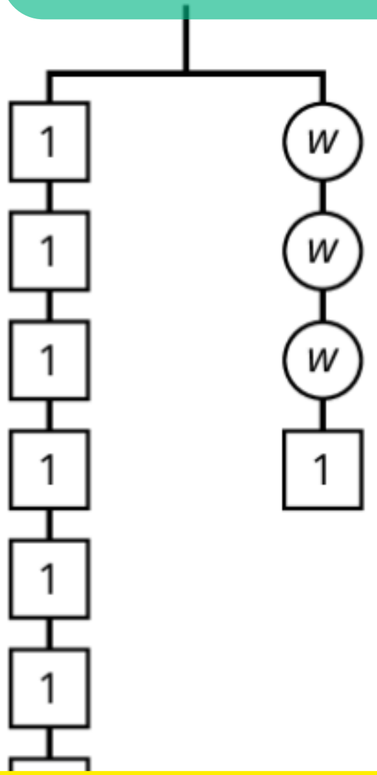
diagram 2

is true

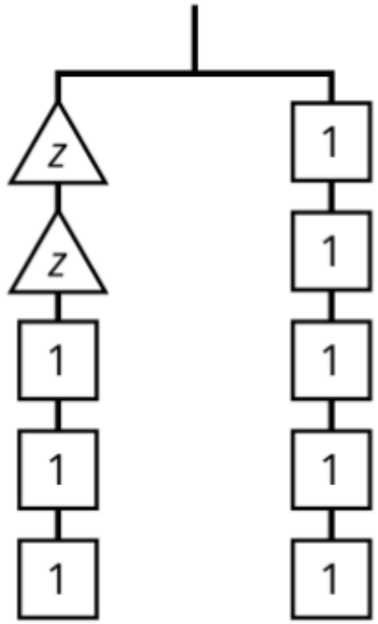
could be

impossible

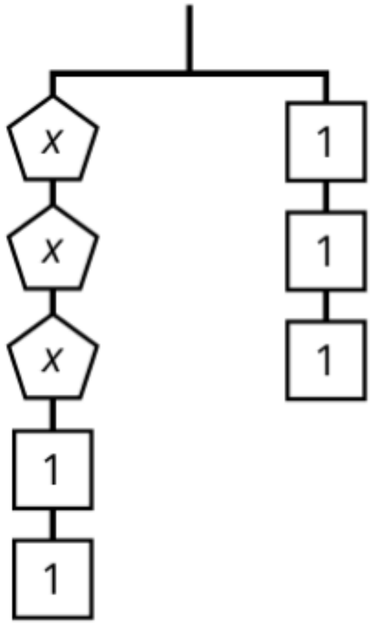
A **3w+1-=7**



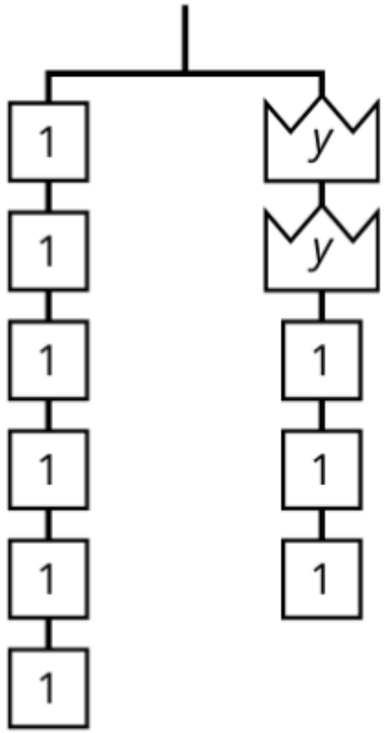
B



C



D



annotate each hanger with the grouping of terms, and what equation would represent it.

1. Match each hanger to an equation. Complete the equation by writing x, y, z, or w in the empty box.

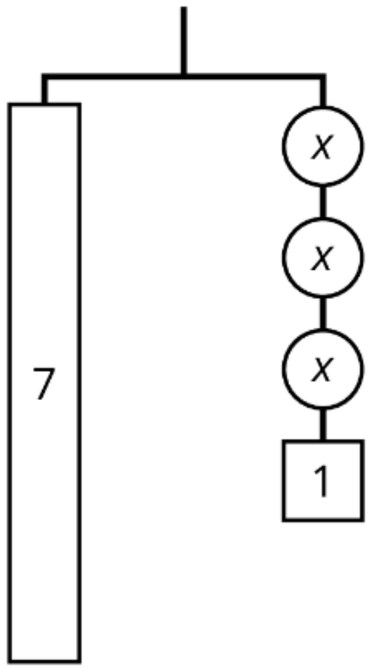
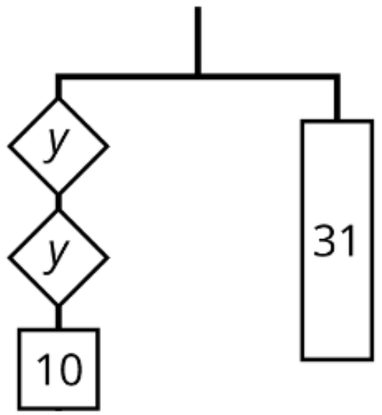
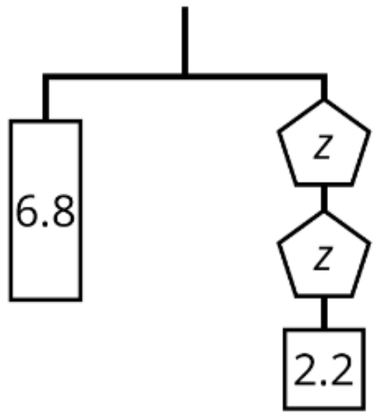
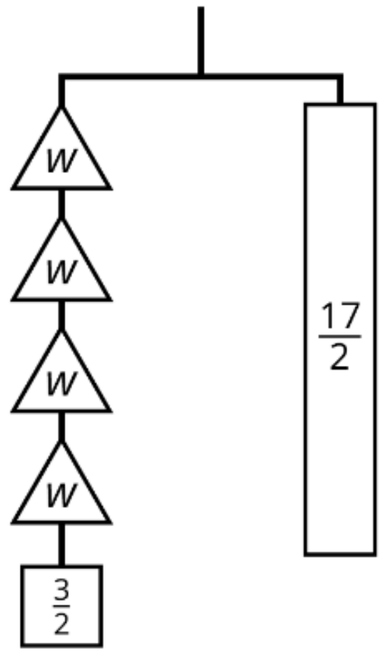
2. Find the solution to each equation. Use the hanger to explain what the solution means.

- $2\square + 3 = 5$
- $3\square + 2 = 3$
- $6 = 2\square + 3$
- $7 = 3\square + 1$

example: solving equations

answers written in the form:
x=____
y=____

$$\begin{aligned} -3x + 4 &= 16 \\ -4 &\quad -4 \\ \frac{-3x}{-3} &= \frac{12}{-3} \\ x &= -4 \end{aligned}$$

A	B	C	D
			
equation	equation	equation	equation
			SOLVE

Morrison After Lunch

1. Go Directly to your assigned seat.
2. Complete Headings on COOL DOWN and CR PACKET.
3. COOL DOWN due first, 5 mins.
4. CR packet due before IR, 20 mins.
5. Last 5 = CB distribution

Cool Down

Solve the equation. If you get stuck, try using a diagram.

$$5x + \frac{1}{4} = \frac{61}{4}$$

solve for the value of X.
*convert fractions to decimals before completing inverse operations

Unit 6 Lesson 8

ARST AVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook page:**

257

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

Warm Up

Select **all** the expressions equivalent to $2(x+3)$.

1) $2 \cdot (x+3)$
2) $(x+3)2$
3) $2 \cdot x + 2 \cdot 3$
4) $2 \cdot x + 3$
5) $(2 \cdot x) + 3$
6) $(2+x)3$

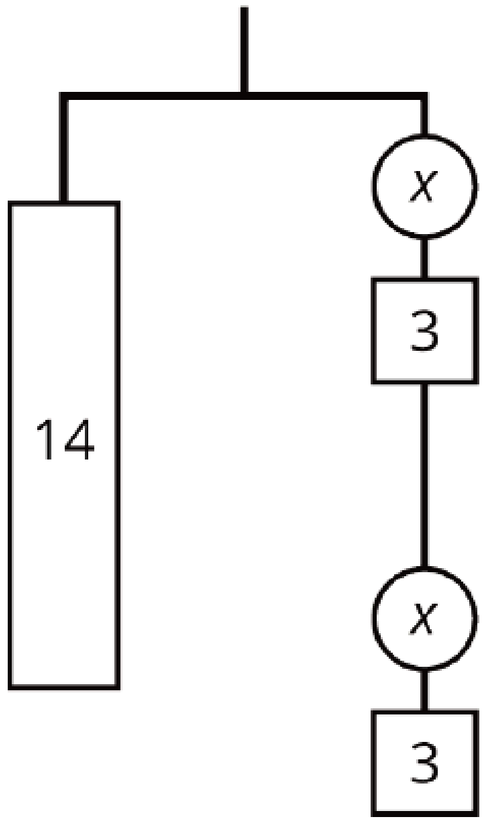
WHAT TO DO

apply distributive property

compare

8.2: Either Or

1. Explain why either of these equations could represent this hanger:



$14 = 2(x + 3)$ o

$14 = 2x + 6$

explain why equation 1 works

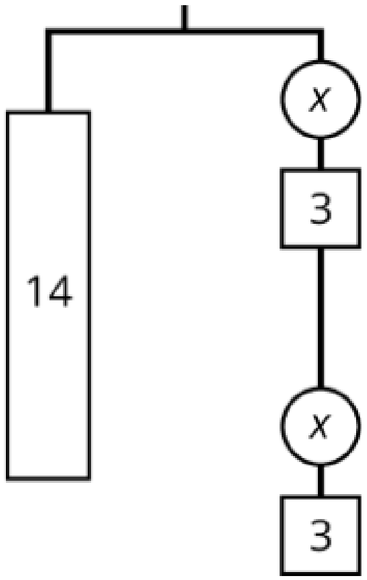
explain why equation 2 works

2. Find the weight of one circle. Be prepared to explain your reasoning.

$$14 = 2(x + 3)$$

or

$$14 = 2x + 6$$

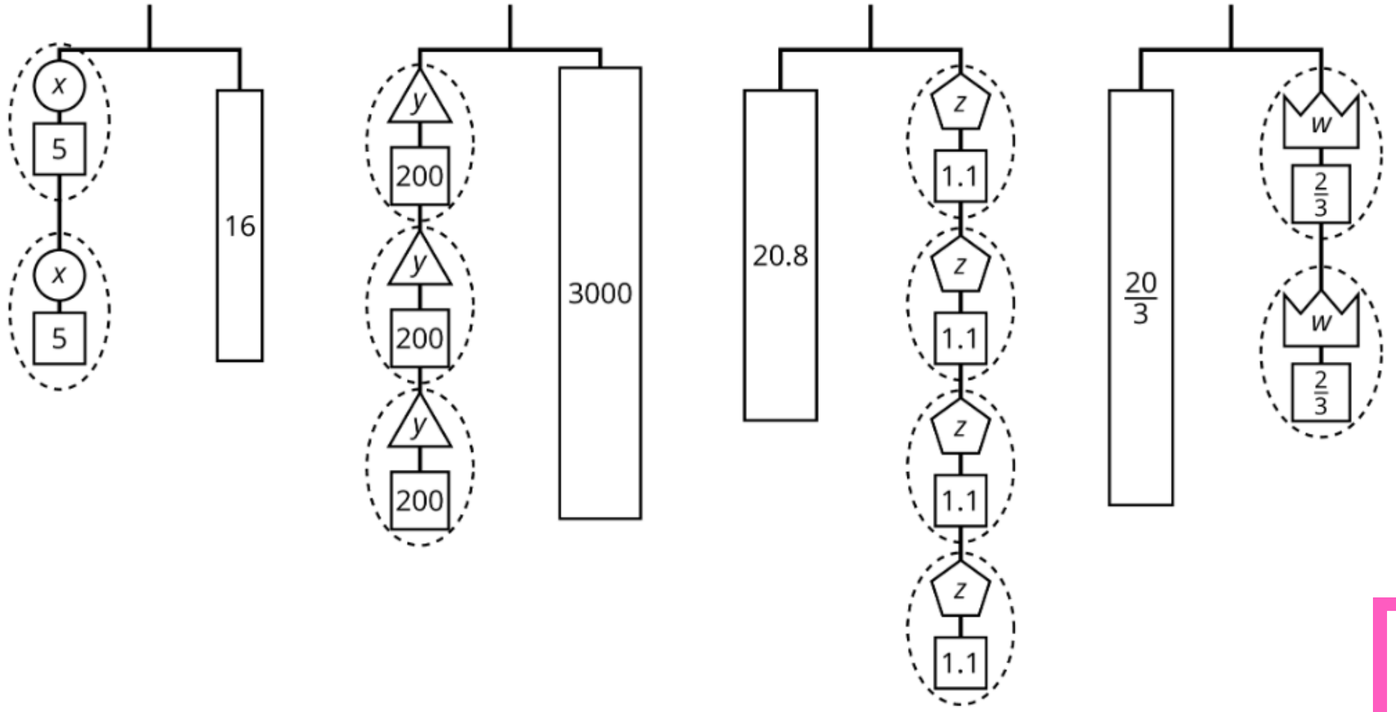


1. Solve for X
2. Equation form changes solution pathway

divide first

distribute first

Here are some balanced hangers. Each piece is labeled with its weight.



1. Match each equation to a hanger\
2. Solve each equation for the variable

- $2(x+5)=16$
- $3(y+200)=3,000$
- $20.8=4(z+1.1)$
- $\frac{20}{3}=2(w+\frac{2}{3})$

solution pathways:

$$2(x+5) = 16$$

divide first

distribute first

inverse operations

Lesson 8 Practice Problems:

complete #1-4

#1 and #2 interpret hangers, write eq. solve!

#3 percent vocab review, match

#4 interpreting tape diagrams and explaining

Unit 6 Lesson 9

1ST AVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

264

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job, you're on!

Agenda + Goals

much to do in a short amount of time

Flow of Block

checking in

jobs + class norms

skipping warm up

Activity 1

Lesson 9 Practice Problems

Cool Down + Pass Out HW

Objectives/Goals

what happened yesterday

what is my job as your teacher

What is your job as a student

moving forward: plans

Yesterday

- disrespect
- misunderstanding
- poor treatment of others
- messes in classroom
- minimal work completion in 1 hr

Today

- why did that happen?
- where did I lose you?
- what feels unfair?
- next steps

Tomorrow

- as a student: meet first 5 expectations, 100% and 0 Disrespect/IPI
- Incentive: quiet music during work time

Student

try your best to meet class norms, listen to instruction as much as possible, and attempt problems to the best of your ability.

Teacher

try my best to take what the school gives me and make it accessible so you can learn in the best capacity. help you learn life lessons that have been imparted on me so you may avoid certain mistakes or find new interests.

Expectations:

1. first 5
2. seat
3. liste n

1. first 5
2. seat
3. listen

- If you fail to meet these expectations, you can earn a redirection.
- If you do not correct the behavior you will be asked to step out.
- If you are unable to have the conversation to re-enter class (ask for cool down space if needed) then culture will be slacked.
- Parents will be notified for FARFAIOUS behaviors.

Jobs

why is this unit important

1 When the expression $2x(x-4)-3(x+5)$ is written in simplest form, the result is

1) $2x^2-11x-15$
2) $2x^2-11x+5$
3) $2x^2-3x-19$
4) $2x^2-3x+1$

2 The point $(3,w)$ is on the graph of $y=2x+7$. What is the value of w?

1) -2
2) -4
3) 10
4) 13

3 Students were asked to write $2x^3+3x+4x^2+1$ in standard form. Four student responses are shown b

Alexa: $4x^2+3x+2x^3+1$

Carol: $2x^3+3x+4x^2+1$

Ryan: $2x^3+4x^2+3x+1$

Eric: $1+2x^3+3x+4x^2$

Which student's response is correct?

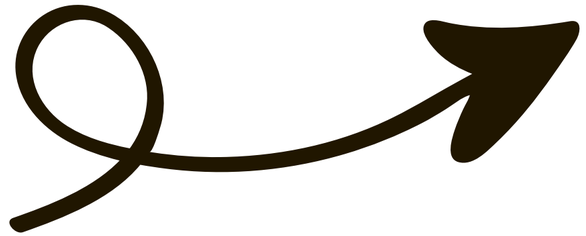
1) Alexa
2) Carol
3) Ryan
4) Eric

4 Given $f(x)=-3x^2+10$, what is the value of $f(-2)$?

1) -26
2) -2
3) 22
4) 46

Solve each equation. Be prepared to explain your reasoning.

1) $x + 6 = 4$
2) $x - -4 = -6$
3) $2(x - 1) = -200$
4) $2x + -3 = -23$



Re-write expressions as needed to help yourself sol

Lesson 9 Practice Problems

1. Solve each equation.

a. $4x = -28$

b. $x - -6 = -2$

c. $-x + 4 = -9$

d. $-3x + 7 = 1$

#1-5

- **two rounds of practice**
- **ten mins each**
- **CFU in between**

example: solving equations

$$
\begin{aligned}
-3x + 4 &= 16 \\
-4 \quad &\quad -4 \\
\frac{-3x}{-3} &= \frac{12}{-3} \\
x &= -4
\end{aligned}
$$

Cool Down

on the back:

one thing you want Ms. McInnis to know. (it can be about math class or something else.)

on the front:

Solve each equation. Show your work, or explain your reasoning.

1) $-3x - 5 = 16$

2) $-4(y - 2) = 12$

Unit 6 Lesson 9+10

FIRST FIVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

267

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

Agenda

60 min: FIRST 5

- Complete L9 Practice Problems (10)
- Lesson 10
  - 10.1 Algebra Talk 10
  - 10.2 Analyzing Solution 10
  - 10.3 Solution Pathways 10
  - Lesson 10 Practice Problems 10
- Lesson 9/10 Cool Down 10

last 5

Lesson 9 Practice Problems

1. Solve each equation.

a. $4x = -28$

b. $x - -6 = -2$

c. $-x + 4 = -9$

d. $-3x + 7 = 1$

#1-5

example: solving equations

$$-3x + 4 = 16$$
$$-4 \quad -4$$
$$\frac{-3x}{-3} = \frac{12}{-3}$$
$$x = -4$$

- two rounds of practice
- ten mins each
- CFU in betwe

267

10.1: Algebra Talk: Solve Each Equation

$100(x-3)=1{,}000$

$500(x-3)=5{,}000$

$0.03(x-3)=0.3$

$0.72(x+2)=7.2$

10.2: Analyzing Solution Methods

Three students each attempted to solve the equation $2(x-9)=10$, but got different solutions. Here are their methods. Do you agree with any of their methods, and why?

Noah's method:

$$
\begin{aligned}
2(x-9) &= 10 && \\
2(x-9)+9 &= 10+9 && \text{add 9 to each side} \\
2x &= 19 && \\
2x \div 2 &= 19 \div 2 && \text{divide each side by 2} \\
x &= \frac{19}{2} &&
\end{aligned}
$$

10.3: Solution Pathways

For each equation, try to solve the equation using each method (dividing each side first, or applying the distributive property first). Some equations are easier to solve by one method than the other. When that is the case, stop doing the harder method and write down the reason you stopped.

1. $2{,}000(x - 0.03) = 6{,}000$

Lesson 10 Practice Problems

1. Andre wants to buy a backpack. The normal price of the backpack is $40. He notices that a store that sells the backpack is having a 30% off sale. What is the sale price of the backpack?

   (From Unit 4, Lesson 11.)

2. On the first math exam, 16 students received an A grade. On the second math exam, 12 students received an A grade. What percentage decrease is that?

Cool Down

on the back:

one thing you want Ms. McInnis to know. (it can be about math class or something else.)

on the front:

Solve each equation. Show your work, or explain your reasoning.

1) $-3x - 5 = 16$

2) $-4(y - 2) = 12$

Unit 6 Lesson 11

FIRST FIVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

276

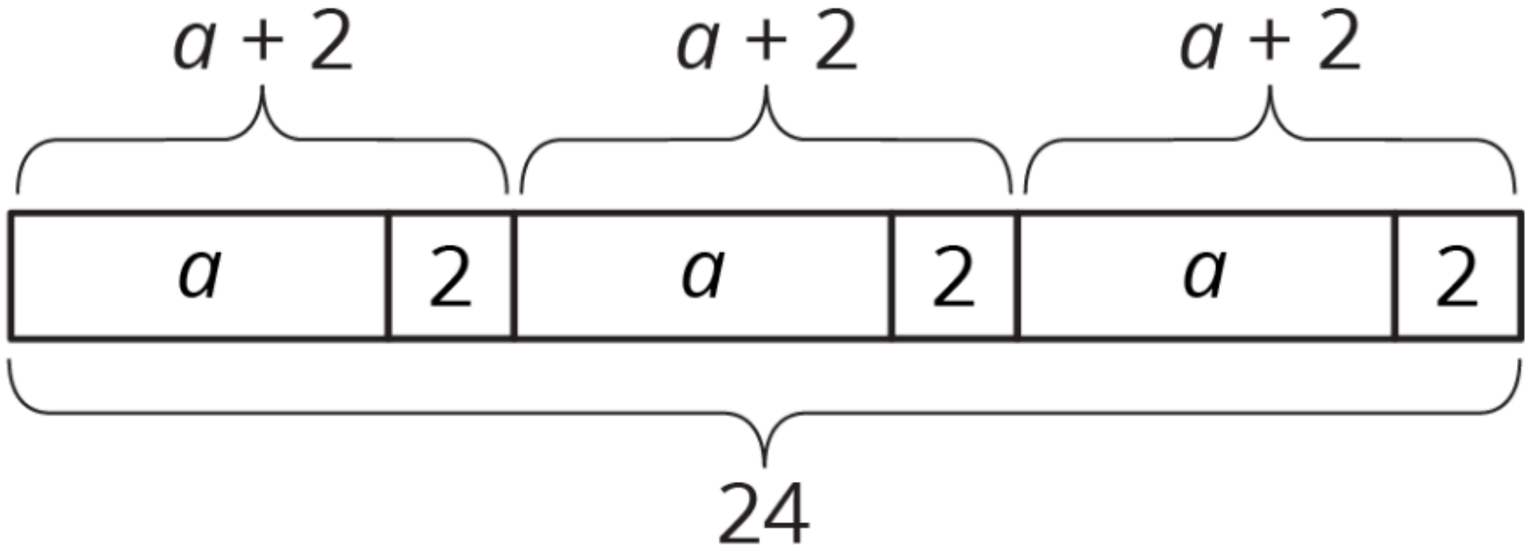
HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

Take out Homework

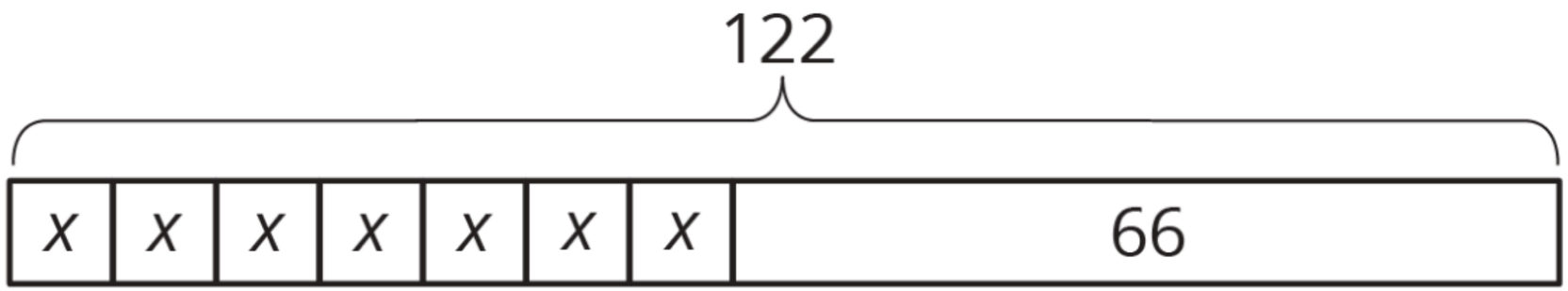
Jobs

Warm Up



1. **Write a story that could be represented by this tape diagram.**
2. **Write an equation that could be represented by this tape diagram.**

At the Fair

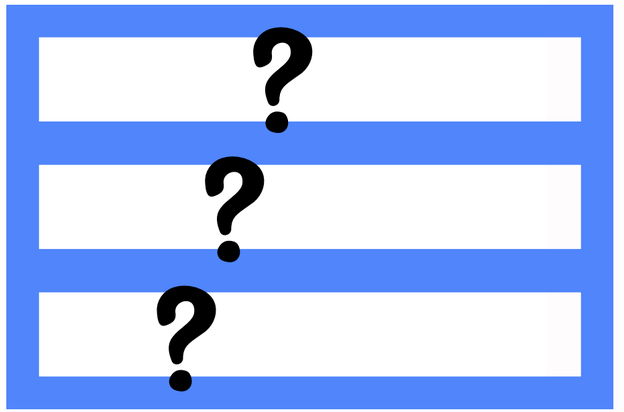


a. Explain how each part of the situation is represented in Tyler's diagram:

How many total invitations Tyler is trying to make.

How many invitations he has made already.

How many days he has to finish the invitations.



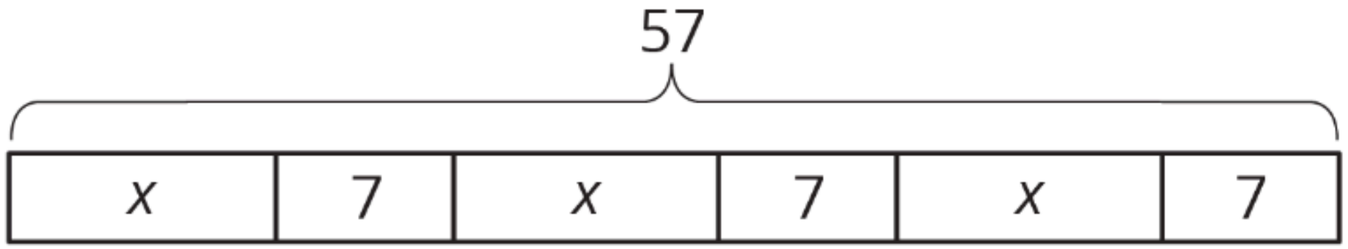
b. How many invitations should Tyler make each day to finish his goal within a week? Explain or show your reasoning.

c. Use Tyler's diagram to write an equation that represents the situation. Explain how each part of the situation is represented in your equation.

d. Show how to solve your equation.

1. **Write an equation that could be represented by this tape diagram.**
2. Solve the equation

2. Noah and his sister are making prize bags for a game at the fair. Noah is putting 7 pencil erasers in each bag. His sister is putting in some number of stickers. After filling 3 of the bags, they have used a total of 57 items.



a) explain how the tape diagram matches the story
b) do you agree with Noah's equation? why?
c) how many stickers does his sister put in?

11.3

3. Priya and Han plan a fundraiser for the running club. They begin with a balance of -80 because of expenses. In the first hour of the fundraiser they collect equal donations from 9 family members, which brings their balance to -44. How much did each parent give?

4. The running club uses the money they raised to pay for a trip to a canyon. At one point during a run in the canyon, the students are at an elevation of 128 feet. After descending at a rate of 50 feet per minute, they reach an elevation of -472 feet. How long did the descent take?

CR-

take out L8 HOMEWORK

Desk: Lesson 9 Cool Down, Lesson 10 Cool DOwn, L9 Homework

Unit 6 Lesson 12

1ST AVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

282

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job, you're on!

Warm Up

An item costs x dollars and then a 20% discount is applied. Select **all** the expressions that could represent the price of the item after the discount.

1) $\frac{20}{100}x$

2) $x - \frac{20}{100}x$

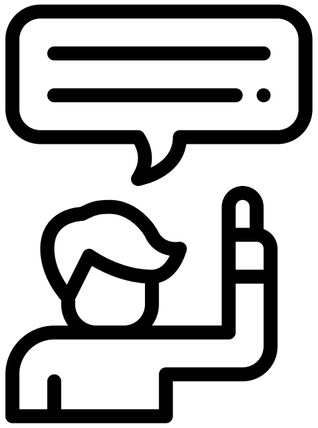
3) $(1 - 0.20)x$

4) $\frac{100-20}{100}x$

5) $0.80x$

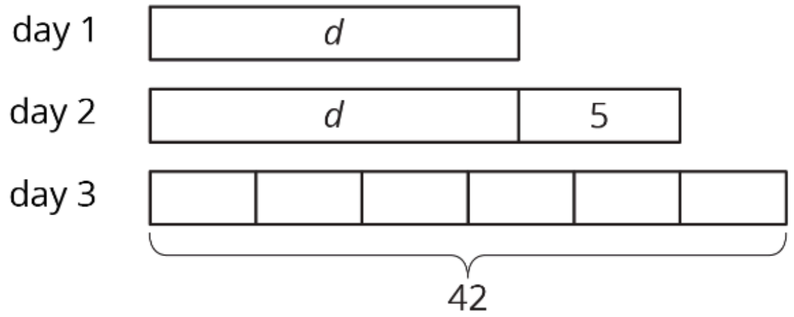
6) $(100 - 20)x$

100%-20%= 80%



1. Read and annotate the word problem
2. Explain how the tape diagram matches

1. Mai started a new exercise program. On the second day, she walked 5 minutes more than on the first day. On the third day, she increased her walking time from day 2 by 20% and walked for 42 minutes. Mai drew a diagram to show her progress.



Explain how the diagram represents the situation.

4 min >

CFU

2. Noah said the equation $1.20(d + 5) = 42$ also represents the situation. Do you agree with Noah? Explain your reasoning.

Explain in full sentences if the equation represents the situation shown in the tape diagram and described in the story.

3. Find the number of minutes Mai walked on the first day. Did you use the diagram, the equation, or another strategy? Explain or show your

Solve for the variable

#4 = challenge

MODEL

1. A store is having a sale where all shoes are discounted by 20%. Diego has a coupon for $\$3$ off of the regular price for one pair of shoes. The store first applies the coupon and then takes 20% off of the reduced price. If Diego pays $\$18.40$ for a pair of shoes, what was their original price before the sale and without the coupon?

you try

1. unpack and jot known info
2. write the equation that matches
3. solve the equation using inverse
4. write answer statement

2. Before the sale, the store had 100 pairs of flip flops in stock. After selling some, they notice that $\frac{3}{5}$ of the flip flops they have left are blue. If the store has 39 pairs of blue flip flops, how many pairs of flip flops (any color) have they sold?

3. When the store had sold $\frac{2}{9}$ of the boots that were on display, they brought out another 34 pairs from the stock room. If that gave them 174 pairs of boots out, how many pairs were on display originally?

4. On the morning of the sale, the store donated 50 pairs of shoes to a homeless shelter. Then they sold 64% of their remaining inventory during the sale. If the store had 288 pairs after the donation and the sale, how many pairs of shoes did they have at the start?

go directly to your seat

take out your homework

complete heading on CR

CR- solving equations

Balance both sides of the equation by using inverse operations to get the variable alone and find its value.

examples:

$$2x + 5 = 21$$
$$\underline{-5} \quad \underline{-5}$$
$$2x = 16$$
$$\frac{2x}{2} = \frac{16}{2}$$
$$x = 8$$

$$5 + \frac{y}{6} = 13$$
$$\underline{-5} \quad \underline{-5}$$
$$\frac{y}{6} = 8$$
$$(6)\ \frac{y}{6} = 8\ (6)$$
$$y = 48$$

*Be sure to make the same change to **both** sides of the equal sign.

Mid-Unit Assessment

Unit 6 Lesson 13

1ST AVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

288

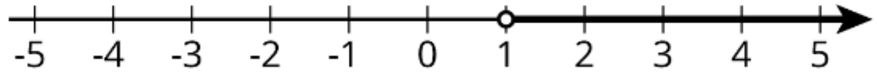
HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job, you're on!

Warm Up

$x > 1$

The number line shows values of x that make the inequality $x > 1$ true.



1. Select **all** the values of x from this list that make the inequality $x > 1$ true.

a. 3 **b.** -3 **c.** 1 **d.** 700 **e.** 1.05

Use the number line and the inequality to determine which are true!

Roller Coasters

A sign next to a roller coaster at an amusement park says, “You must be at least 60 inches tall to ride.” Noah is happy to know that he is tall enough to ride.

1) Noah is x inches tall. Which of the following can be true: $x > 60$, $x = 60$, or $x < 60$? Explain how you know.

X > 60

X = 60

X < 60

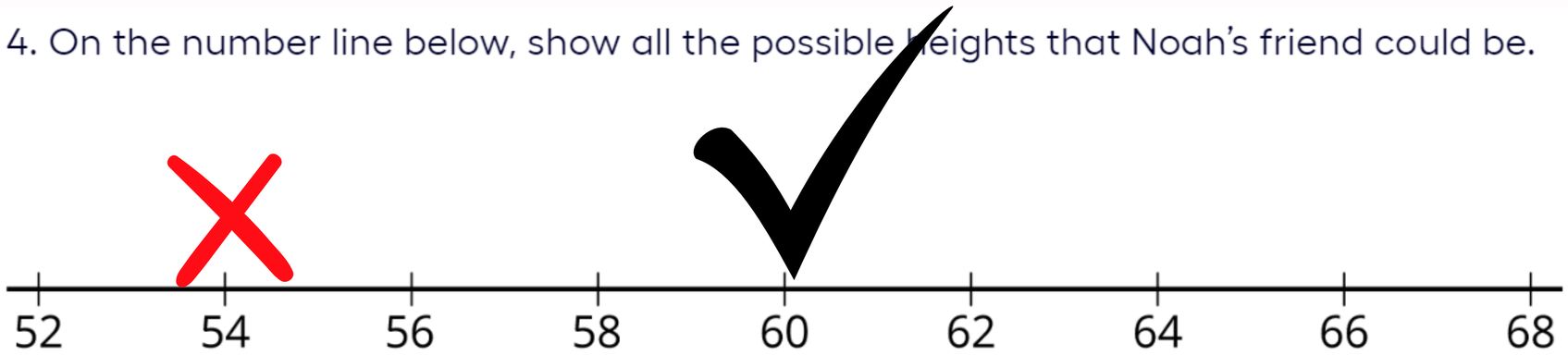
2) Noah's friend is 2 inches shorter than Noah. Can you tell if Noah's friend is tall enough to go on the ride? Explain or show your reasoning.

In complete sentences, EXPLAN

3. List one possible height for Noah that means that his friend is tall enough to go on the ride, and another that means that his friend is too short for the ride.

What needs to be true for the friend to come!

4. On the number line below, show all the possible heights that Noah's friend could be.



5. Noah's friend is y inches tall. Use y and any of the symbols $<$, $=$, $>$ to express this height.

y ____ ?

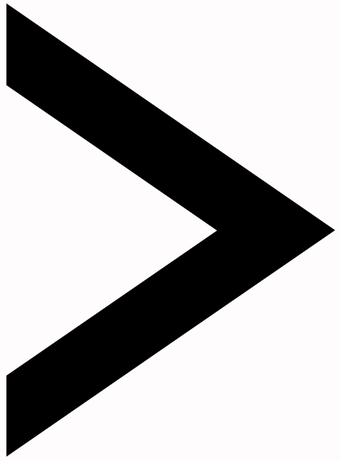
60 seconds, add this heading /column to work book

inequality in words	x
	$x \leq 25$
	$100 < 4x$
	$-3x > -75$
	$10 \geq 35 - x$

Use space below the table to subtitute values into the inequality to see if it creates a true statement

x	0	100	-100	25
$x \leq 25$				
$100 < 4x$				
$-3x > -75$				
$10 \geq 35 - x$				

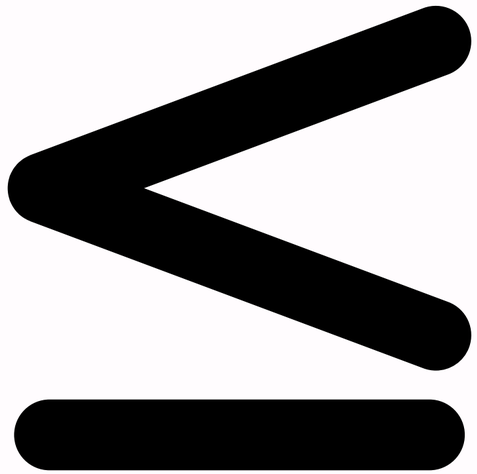
inequality means not equal



greater than

greater than OR equal to

less than



less than OR equal to

Unit 6 Lesson 14

FIRST FIVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

293

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

Warm Up

1)

Solve $-x = 10$

2)

Find 2 solutions to $-x > 10$

3)

Solve $2x = -20$

4)

Find 2 solutions to $2x > -20$

What is the difference between equations and inequalities?

What is the INVISIBLE coefficient in #1-2??

Equations:	**Inequalities**
have only one solution. there is only one number I can plug in for X to solve.	have more than one solution, there is a range of numbers I can plug in for X to create a true statement

relating equations and inequalities

1) Andre has a summer job selling magazine subscriptions. He earns $25 per week plus $3 for every subscription he sells. Andre hopes to make at least enough money this week to buy a new pair of soccer cleats.

a. Let n represent the number of magazine subscriptions Andre sells this week. Write an expression for the amount of money he makes this week.

b. The least expensive pair of cleats Andre wants costs $68. Write and solve an equation to find out how many magazine subscriptions Andre needs to sell to buy the cleats.

togethe

p

independe

nt

solution:

c. If Andre sold 16 magazine subscriptions this week, would he reach his goal? Explain your reasoning.

d. What are some other numbers of magazine subscriptions Andre could have sold and still reached his goal?

Inequalities

have more than one solution, there is a range of numbers I can plug in for X to create a true statement

connecting to inequalities:

e. Write an *inequality* expressing that Andre wants to make at least $68.

f. Write an inequality to describe the number of subscriptions Andre must sell to reach his goal.

write 2:

independent

2. Diego has budgeted $35 from his summer job earnings to buy shorts and socks for soccer. He needs 5 pairs of socks and a pair of shorts. The socks cost different amounts in different stores. The shorts he wants cost $19.95.

a. Let x represent the price of one pair of socks. Write an expression for the total cost of the socks and shorts.

b. Write and solve an equation that says that Diego spent exactly $35 on the socks and shorts.

c. List some other possible prices for the socks that would still allow Diego to stay within his budget.

d. Write an inequality to represent the amount Diego can spend on a single pair of socks.

1. Kiran has $100 saved in a bank account. (The account doesn't earn interest.) He asked Clare to help him figure out how much he could take out each month if he needs to have at least $25 in the account a year from now.

a. Clare wrote the inequality $-12x + 100 \geq 25$, where x represents the amount Kiran takes out each month. What does $-12x$ represent?

b. Find some values of x that would work for Kiran.

c. We could express *all* the values that would work using either $x \leq$ __ or $x \geq$ __. Which one should we use?

d. Write the answer to Kiran's question using mathematical notation.

b. The teacher has $36 to spend on the granola bars. The equation $9(7-x)=36$ represents a situation where she spends all $36. Solve this equation.

c. What does the solution mean in this situation?

d. The teacher does not have to spend all $36. Write an inequality relating 36 and $9(7-x)$ representing this situation.

e. The solution to this inequality must either look like $x \geq 3$ or $x \leq 3$. Which do you think it is? Explain your reasoning.

go directly to your seat

complete heading on

cool down

complete heading on CR

Unit 6 Lesson 15+16

FIRST FIVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

305

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

Agenda

90 min:

FIRST 5

- **Lesson 16 - Page 305**
  - 16.1 Solve inequalities (305)
  - 16.2 Club Activities Matching (305-6)
- **Lesson 15-Page 299**
  - 15.1 Lots of Negatives #2-3
  - 15.2 Inequalities with tables
  - 15.3 Which side are the Solutions
  - Lesson 15 Practice Problems

last

warm up page 305

For each inequality, find the value or values of x that make it true.

1) $8x + 21 \leq 56$

2) $56 < 7(7 - x)$

16.2 Club Activities Match page 305-6

1. The Garden Club is planting fruit [illegible] ol's garden. There is one large tree that needs 5 pounds of fertilizer. The rest are newly planted trees that need $\frac{1}{2}$ pound fertilizer each.

a. $25x + 5 \leq \frac{1}{2}$

b. $\frac{1}{2}x + 5 \leq 25$

c. $\frac{1}{2}x + 25 \leq 5$

d. $5x + \frac{1}{2} \leq 25$

unpack

write your own inequality

#4 is a bonus challenge :)

showcall page 106

15.1 Lots of Negatives page

2. Select **all** the values that are solutions to $-x \geq -4$:

a. 3

b. -3

c. 4

d. -4

e. 4.001

f. -4.001

299

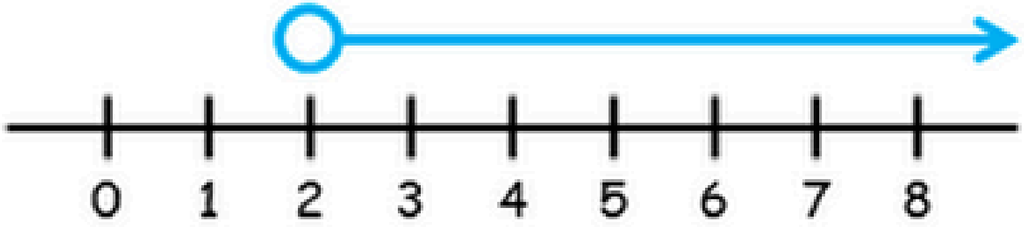
$$-1x \geq -4$$

1. **Substitute values for x**
2. **Choose ALL that are correct**
3. **<u>Consider</u>: where do these numbers fall on the number line in comparison**

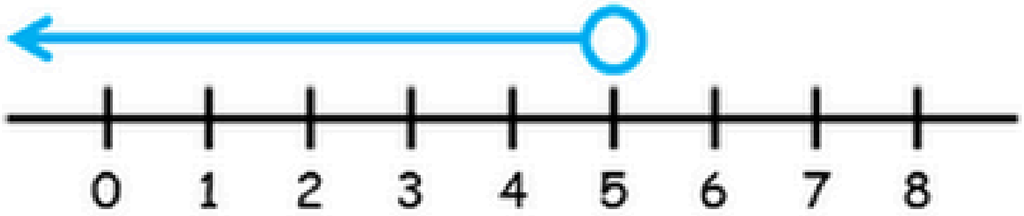
Inequalities on a number line

An **open circle** means that the value is **not included**:

$x > 2$ x is greater than 2

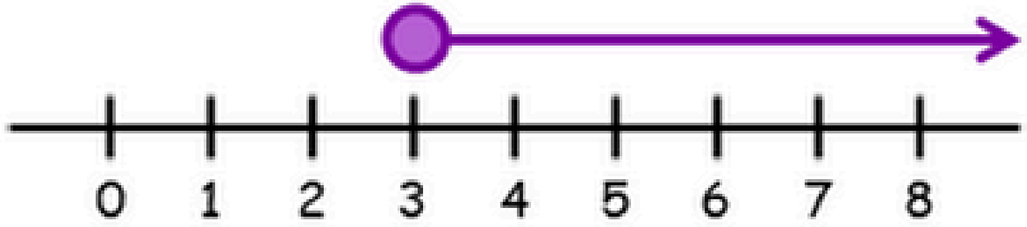


$x < 5$ x is less than 5

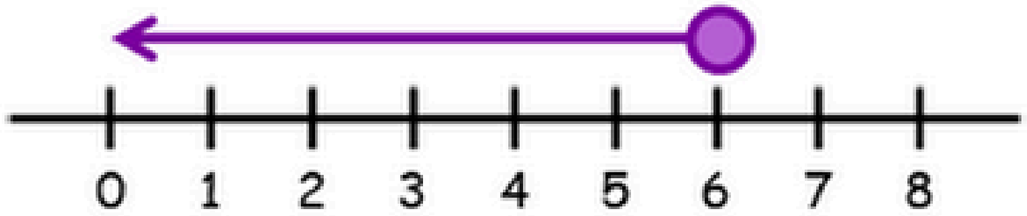


A **filled in circle** means that the value **is included**:

$x \geq 3$ x is greater than or equal to 2



$x \leq 6$ x is less than or equal to 6



15.2 Inequalities with Tables page 299-300

1) Let's investigate the inequality $x -$

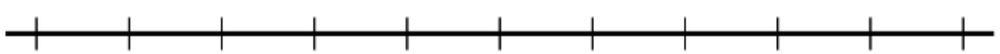
x	-4	-3	-2	-1	0	1	2	3	4
$x - 3$	-7		-5				-1		1

a. Complete the table.

b. For which values of x is it true that $x - 3 = -2$?

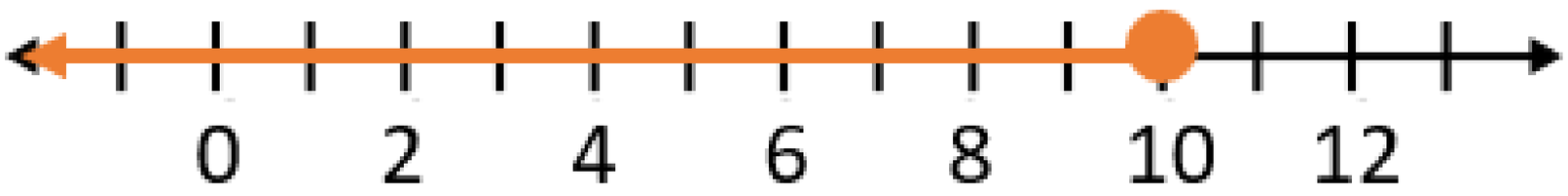
c. For which values of x is it true that $x - 3 > -2$?

d. Graph the solutions to $x - 3 > -2$ on the number line:



Lesson 15 Practice Problems - p 203

$y + 12 \leq 22$	Original inequality
$y + 12 - 12 \leq 22 - 12$	Subtract 12 from both sides
$y \leq 10$	Simplify: $22 - 12 = 10$



Unit 6 Lesson 17

FIRST FIVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

311

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

Lesson 17 Warm Up p 311

The stage manager of the school musical is trying to figure out how many sandwiches he can order with the $83 he collected from the cast and crew. Sandwiches cost $5.99 each, so he lets x represent the number of sandwiches he will order and writes $5.99x \leq 83$. He solves this to 2 decimal places, getting $x \leq 13.86$.

Which of these are valid statements about this situation? (Select **all** that apply.)

1) He can call the sandwich shop and order exactly 13.86 sandwiches.
2) He can round up and order 14 sandwiches.
3) He can order 12 sandwiches.
4) He can order 9.5 sandwiches.
5) He can order 2 sandwiches.
6) He can order -4 sandwiches.

Based on the solution, and the context- read each answer and determine if it is true or false

17.2 Elevator

A mover is loading an elevator with identical boxes. He wants to take all the boxes up the elevator at once, but he is worried about overloading the elevator. What are all the possibilities for the number of boxes the mover can take on the elevator at once?

what does the word CAPACITY mean?

17.2 Elevator

A mover is loading an elevator with many identical 48-pound boxes. The mover weighs 185 pounds. The elevator can carry at most 2000 pounds.

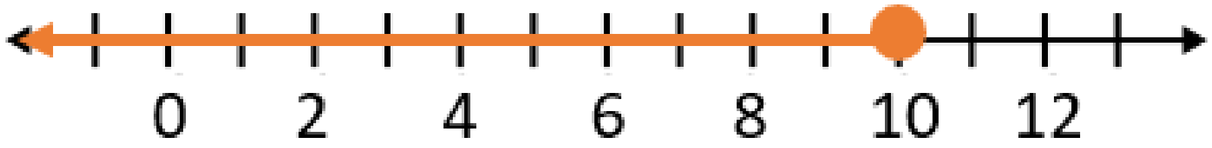
1. Write an inequality that says that the mover will not overload the elevator on a particular ride. Check your inequality with your partner.

what gets put on the elevator (inequality symbol) capacity

7.2 Elevator

2. Solve your inequality and explain what the solution means.

$y + 12 \leq 22$	Original inequality
$y + 12 - 12 \leq 22 - 12$	Subtract 12 from both sides
$y \leq 10$	Simplify: 22 − 12 = 10



17.2 Elevator

. Graph the solution to your inequality on a number line.

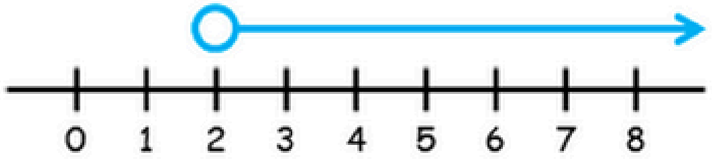
. If the mover asked, “How many boxes can I load on this elevator at a ime?,” what would you tell them?

Inequalities must be in SIMPLEST form to graph

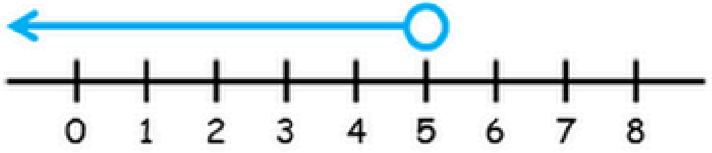
Inequalities on a number line

An **open circle** means that the value is **not included**:

$x > 2$ — x is greater than 2

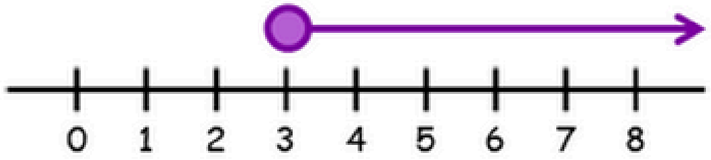


$x < 5$ — x is less than 5

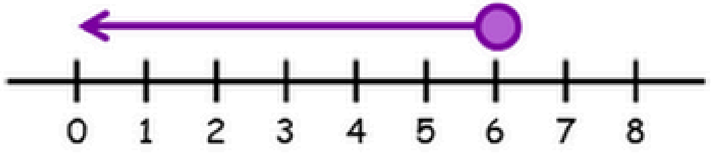


A **filled in circle** means that the value **is included**:

$x \geq 3$ — x is greater than or equal to 2



$x \leq 6$ — x is less than or equal to 6



Lesson 17 Practice p 314

2. a. In the cafeteria, there is one large 10-seat table and many smaller 4-seat tables. There are enough tables to fit 200 students. Write an inequality whose solution is the possible number of 4-seat tables in the cafeteria.

b. 5 barrels catch rainwater in the schoolyard. Four barrels are the same size, and the fifth barrel holds 10 liters of water. Combined, the 5 barrels can hold at least 200 liters of water. Write an inequality whose solution is the possible size of each of the 4 barrels.

3. Solve each equation.

a. $5(n-4) = -60$

b. $-3t + -8 = 25$

c. $7p - 8 = -22$

d. $\frac{2}{5}(j+40) = -4$

e. $4(w+1) = -6$

examples:

$$2x + 5 = 21$$
$$-5 \quad -5$$
$$2x = 16$$
$$\frac{2x}{2} = \frac{16}{2}$$
$$x = 8$$

$$5 + \frac{y}{6} = 13$$
$$-5 \quad -5$$
$$(6)\frac{y}{6} = 8\,(6)$$
$$y = 48$$

4. Select **all** the inequalities that have the same graph as $x < 4$.

A. $x < 2$

B. $x + 6 < 10$

C. $5x < 20$

D. $x - 2 > 2$

E. $x < 8$

to compare i need all inequalities in simplest form -- SOLVE

go directly to your seat

complete heading on

cool down

complete heading on

CR

Laptop in SEAT BASKET

Cool Down

Elena is trying to figure out how many movies she can download to her hard drive. The hard drive is supposed to hold 500 gigabytes of data, but 58 gigabytes are already taken up by other files. Each movie is 8 gigabytes. Elena wrote the inequality $8x + 58 \geq 500$ and solved it to find the solution $x \geq 55.25$.

1. Explain how you know Elena made a mistake based on her solution.

2. Fix Elena's inequality and explain what each part of the inequality means.

CR- solving equations

Balance both sides of the equation by using inverse operations to get the variable alone and find its value.

examples:

$$2x + 5 = 21$$
$$-5 \quad -5$$
$$\frac{2x}{2} = \frac{16}{2}$$
$$x = 8$$

$$5 + \frac{y}{6} = 13$$
$$-5 \quad -5$$
$$(6)\,\frac{y}{6} = 8\,(6)$$
$$y = 48$$

*Be sure to make the same change to **both** sides of the equal sign.

Includes: Solving equations from word problems

Unit 6 Lesson 18

1ST AVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

316

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job, you're on!

Lesson 18 Warm Up

$-30 + -10$

$-10 + -30$

$-30 - 10$

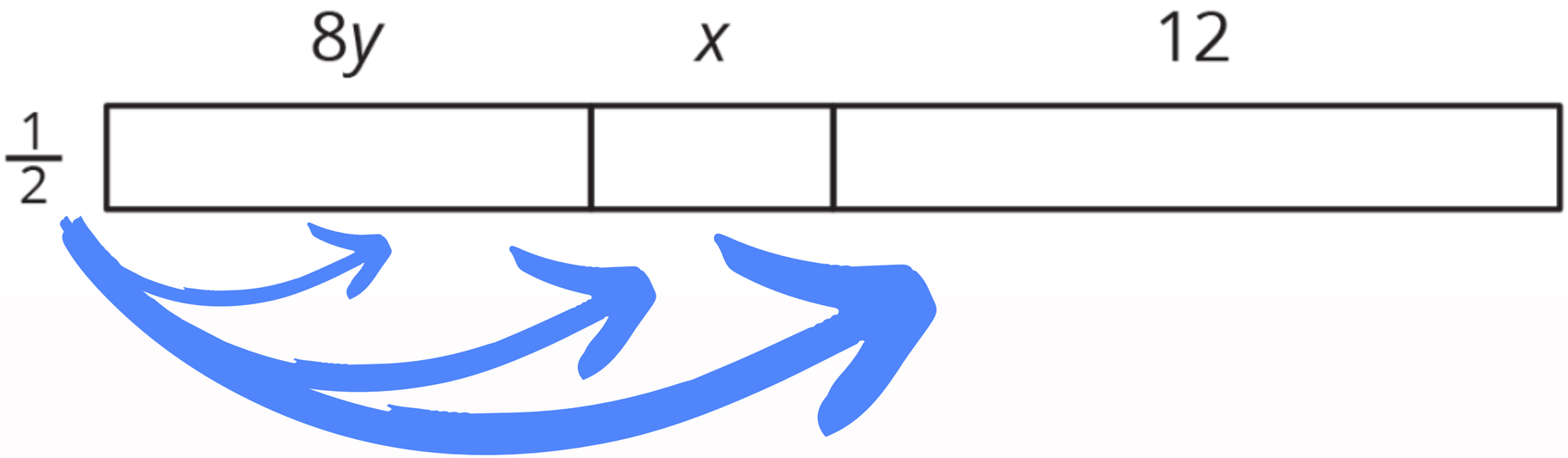
$10 - -30$

Solve the following expressions

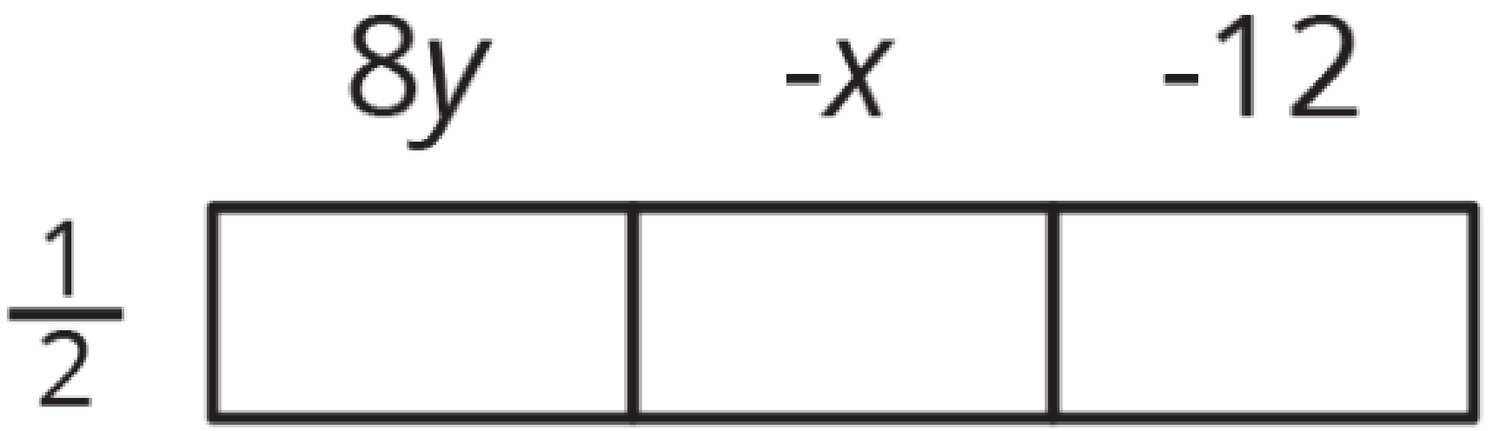
Consider rules around adding and subtracting positive and negative numbers

18.2 Apply Distributive Property

1. Write two expressions for the area of the big rectangle.



2. Use the distributive property to write an expression that is equivalent to $\frac{1}{2}(8y + -x + -12)$. The boxes can help you organize your work.



3. Use the distributive property to write an expression that is equivalent to $\frac{1}{2}(8y - x - 12)$.

1. For each expression, write an equivalent expression that uses only addition.

a. $20 - 9 + 8 - 7$

b. $4x - 7y - 5z + 6$

c. $-3x - 8y - 4 - \frac{8}{7}z$

Lesson 18 practice problems

2. Use the distributive property to write an expression that is equivalent to each expression. If you get stuck, consider drawing boxes to help organize your work.

a. $9(4x - 3y - \frac{2}{3})$

b. $-2(-6x + 3y - 1)$

c. $\frac{1}{5}(20y - 4x - 13)$

d. $8(-x - \frac{1}{2})$

e. $-8(-x - \frac{3}{4}y + \frac{7}{2})$

3. Kiran wrote the expression $x - 10$ for this number puzzle: “Pick a number, add -2, and multiply by 5.”

   Lin thinks Kiran made a mistake.

   a. How can she convince Kiran he made a mistake?

   b. What would be a correct expression for this number puzzle?

energy in megawatts	number of days
1,200	2.4
1,800	3.6
4,000	8
10,000	20

energy in megawatts	number of days
100	1
650	4
1,200	7
1,750	10

Unit 6 Lesson 19

FIRST FIVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **Open workbook to page:**

321

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job,

19.1: Number Talk: Parentheses

Find the value of each expression **GEMDAS**

$2 + 3 \cdot 4$

$(2 + 3)(4)$

$2 - 3 \cdot 4$

$2 - (3 + 4)$

follow order of operations.
show calculations to prove your answer is correct

Model: Distribute/Factor

In each row, write the equivalent expression. If you get stuck, use a diagram to organize your work. The first row is provided as an example. Diagrams are provided for the first three rows.

	5	-2y
-3	-15	6y

	a	-6
5		

2	6a	-2b

factored	expanded
$-3(5-2y)$	$-15+6y$
$5(a-6)$	
	$6a-2b$

Factored	Expanded (Distribute)
$-4(2w - 5z)$	
$-(2x - 3y)$	
	$20x - 10y + 15z$
$k(4 - 17)$	
	$10a - 13a$
$-2x(3y - z)$	
	$ab - bc - 3bd$
$-x(3y - z + 4w)$	

From FACTORED to EXPANDED

Factored → **Expanded (Distribute)**

multiply the number outside the parentheses to ALL the terms inside the parentheses

EXPANDED to FACTORED

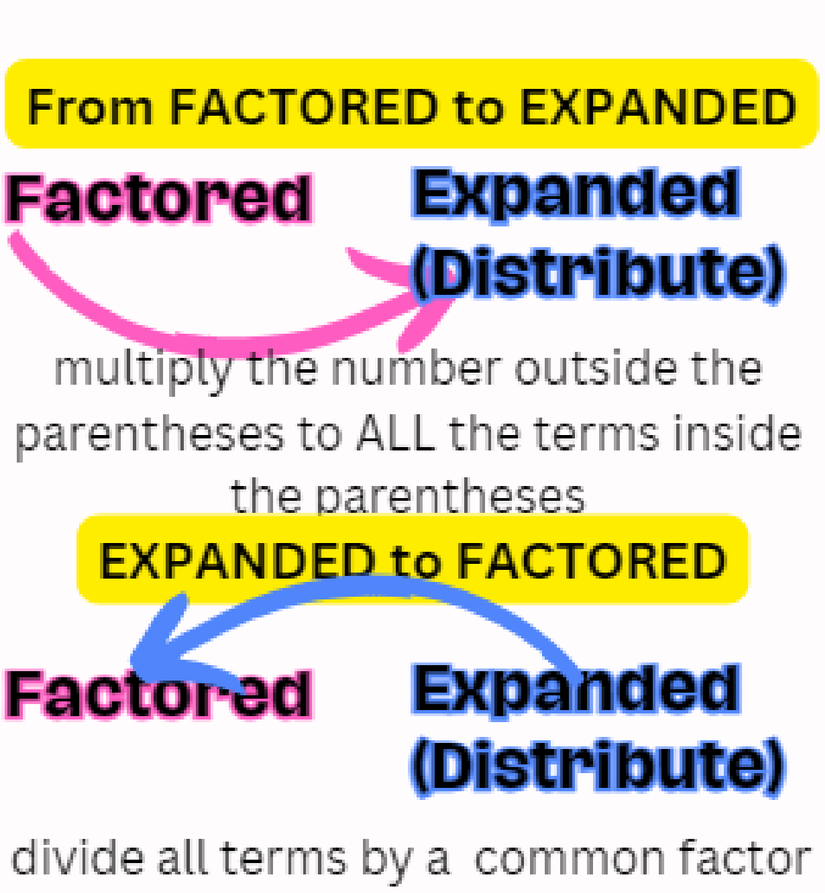
Factored ← **Expanded (Distribute)**

divide all terms by a common factor

Lesson 19 Practice Problems

1. a. Expand to write an equivalent expression: $\frac{-1}{4}(-8x + 12y)$

b. Factor to write an equivalent expression: $36a - 16$

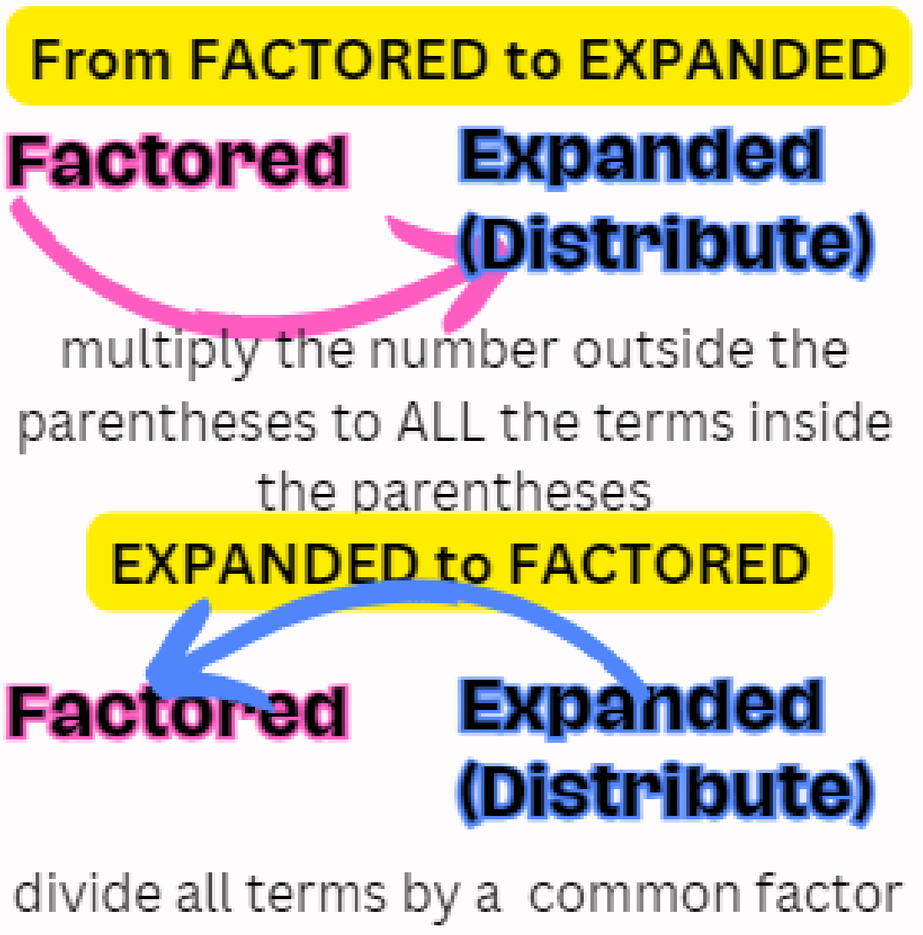


2. Lin missed math class on the day they worked on expanding and factoring. Kiran is helping Lin catch up.

   a. Lin understands that expanding is using the distributive property, but she doesn't understand what factoring is or why it works. How can Kiran explain factoring to Lin?

   b. Lin asks Kiran how the diagrams with boxes help with factoring. What should Kiran tell Lin about the boxes?

   c. Lin asks Kiran to help her factor the expression $-4xy - 12xz + 20xw$. How can Kiran use this example to Lin understand factoring?



4. Elena makes her favorite shade of purple paint by mixing 3 cups of blue paint, $1\frac{1}{2}$ cups of red paint, and $\frac{1}{2}$ of a cup of white paint. Elena has $\frac{2}{3}$ of a cup of white paint.

a. Assuming she has enough red paint and blue paint, how much purple paint can Elena make?

make mixed numbers to improper fractions

create common denominators

What is the original amount of paint

b. How much blue paint and red paint will Elena need to use with the $\frac{2}{3}$ of a cup of white paint?

5. Solve each equation.

a. $\frac{-1}{8}d - 4 = \frac{-3}{8}$

b. $\frac{-1}{4}m + 5 = 16$

c. $10b + -45 = -43$

d. $-8(y - 1.25) = 4$

e. $3.2(s + 10) = 32$

6. Select **all** the inequalities that have the same solutions as $-4x < 20$.

A. $-x < 5$

B. $4x > -20$

C. $4x < -20$

D. $x < -5$

E. $x > 5$

F. $x > -5$

Unit 6 Review

1ST AVE MINUTES

WHAT TO DO

1. Go **directly** to your assigned seat.
2. Backpack and Coat go on back of chair.
3. Take out your **PENCIL** and **Calculator**
4. **HEADING on PACKETS**

HOW TO DO IT

- You should not earn an IPI during this time.
- Volume = Indoor Level
- With urgency, be ready before timer!
- If you have a job, you're on!