

Date: _____

Lesson 6-1

(p 282 - 286)

Ratios:

* _____ different ways to write a ratio:

①

②

③

*	_____
*	_____
*	_____

Ex:1 12 Fuji, 9 Granny Smith, 30 Red Delicious

Using this information on Apples, write a Ratio

a) Compare Red Delicious to Granny Smith:

b) Compare Fuji to Red Delicious:

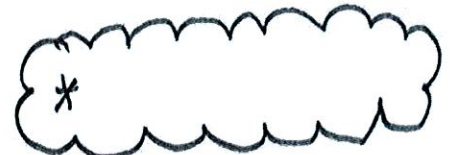
Equivalent Ratios:

Ex:2 Are these Ratios equivalent?

a) $6 : 8$ $9 : 12$

b) 6 months : 2 years

8 months : 3 years



Date: _____

Lesson 6-2

(p287-292)

Unit: _____

examples:

Rate: _____

examples:

Unit Rate: _____

examples:

Find Unit Rate

Ex.1 Earn \$320 in 40 hours

① _____

② _____

③ _____

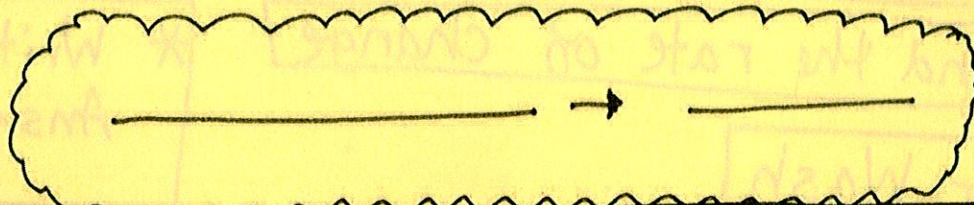
Ex.2 \$18 for 36 tickets

Ex.3 65 miles in 2.6 gallons

Date: _____

Lesson 6-3 Day 1 (p 293-297)

Slope () = _____



Ex:1

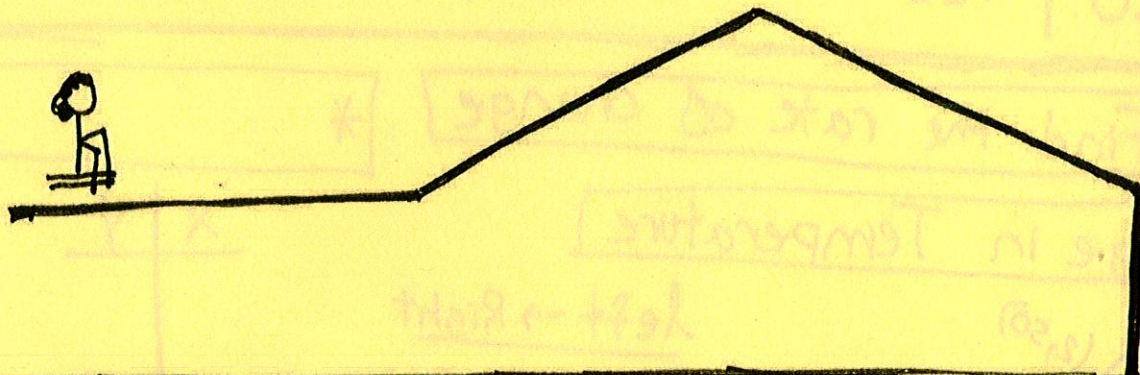
X	Y
2	-2
3	-1
4	2

Find the slope of the ordered pairs

*

youtube

"Slope Dude"



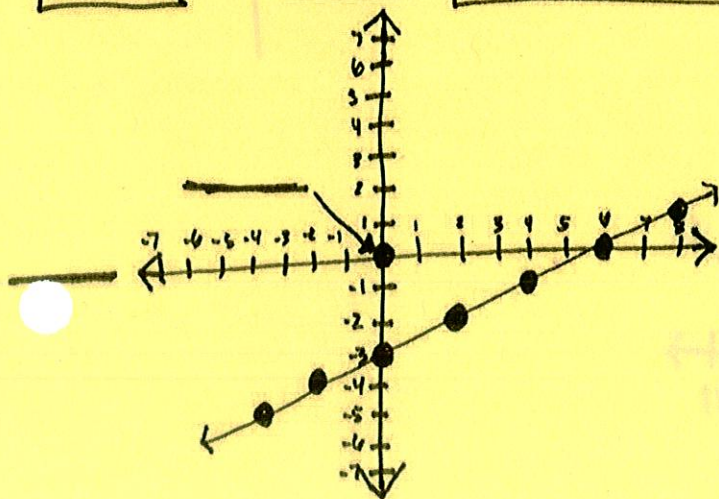
Ex:2

Find the slope of the line

Coordinates

(,)

(,)



*

X	Y
---	---

Date: _____

Lesson 6-3 Day 2

* Rate of Change: _____ = _____

()

A Rate that describes how one quantity changes in relation to another

Ex:1

Find the rate of change

* Write Final Answer using _____ & _____

Car Wash

# of cars	money (\$)
5	40
10	80
15	120
20	160

Ex:2

Find the rate of change

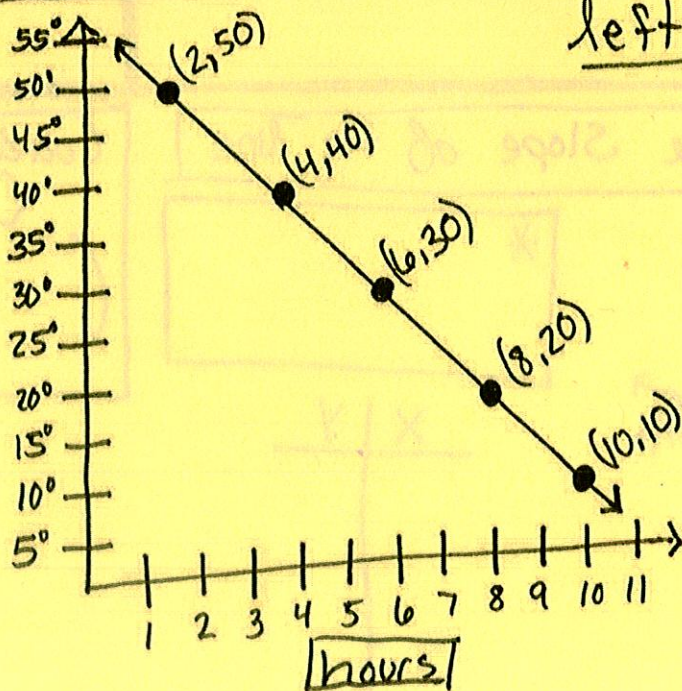
*

Change in Temperature

left → Right

X | Y

Temp.



Date: _____

Lesson 6-6

(p310-315)

Proportions: _____

Ex:1 Are the ratios Proportional?

S Team		E team
$\frac{200 \text{ students}}{40 \text{ teachers}}$	$\frac{?}{?}$	$\frac{350 \text{ students}}{70 \text{ Teachers}}$

Solve The Proportion

★ Steps ★

Ex:1 $\frac{20}{30} = \frac{w}{15}$

① Show _____

② _____

③ Isolate _____

④ _____ 😊

Ex:3 $\frac{8}{n} = \frac{10}{15}$

Ex:4 $\frac{120}{75} = \frac{8}{m}$

Lesson 6-6

Setting up Proportions (p310-315)

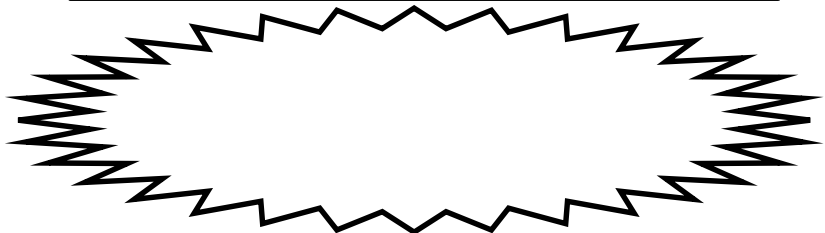
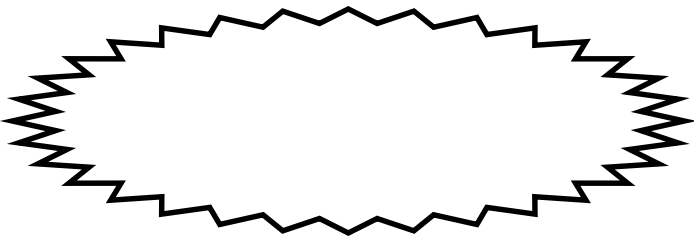
Steps

Ex:1

A train traveled 720 Km in 9 hrs.
How far would it travel in 11 hrs.?

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

1)	_____
	_____ = _____
2)	_____
3)	_____
4)	_____



Check for Understanding

Ex:2

A painting press can paint 350 sheets in 4 minutes. How long will it take to print 525 sheets?

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Ex:3

Three and a half pounds of peaches cost \$1.68. How much would two and a half of peaches cost?

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Lesson 6-8

Scale Factor (p320-325)

Scale Drawing's- _____

Steps

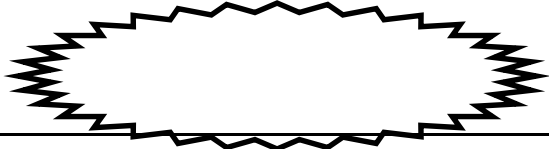
Ex:1 Map of Iowa: Des Moines to Iowa City is 5 in.
 The scale is 1 in to 24 mi. Find the distance

_____ = _____

1) _____
 _____ = _____

2) _____

3) _____

4) 

Check for understanding

Ex:2 Find the actual distance between Des Moines and Las Vegas.
 The scale is 0.5 in. to 40 miles. The distance on the map is 17.75 in.

_____ = _____

Ex:3 Find the length of the lake on the map. A lake is 85 ft. across. The scale is 1 in to 4 ft.

_____ = _____

Lesson 6-Supp

Proportional Linear Relationships (p418-424)

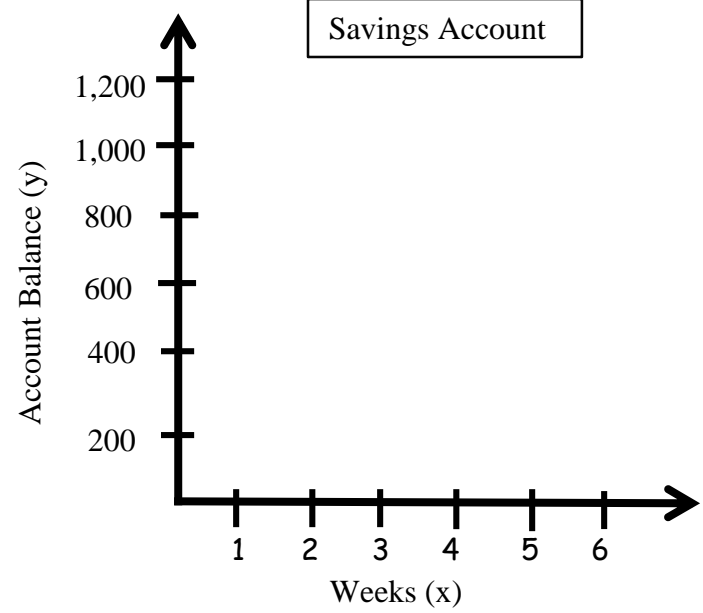
Proportional Linear Relationships: When two quantities

- 1) _____ 2) _____
 3) _____
- $$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$

Graph the table and determine if it is proportional

Ex:1 Savings Account

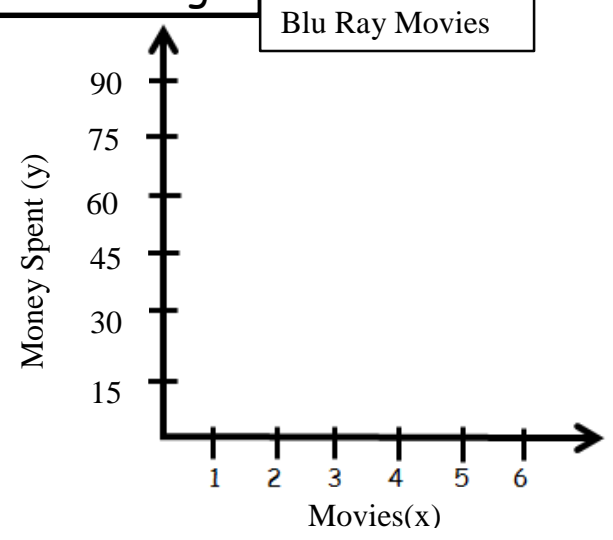
Weeks(x)	Account Balance (y)
1	200
2	400
3	600
4	900
5	1,000



Ex:2 Blu Ray Movies

Movies(x)	Money Spent (y)
2	24
3	36
4	48
5	60
6	72

Check for Understanding



Lesson 6-1

Ratios (p 282-286)

Ratio: A comparison of 2 quantities **by division**

↳ 3 different ways to write a ratio:

① 12 : 1

② $\frac{12}{1}$

③ 12 to 1

ex: Using the chart, write a ratio comparing Red Delicious Apples to Granny Smith Apples.

12	Fuji
9	Granny Smith
30	Red Delicious

30 to 9

$$\frac{30 \div 3}{9 \div 3} = \left(\frac{10}{3}\right)$$

- ① write the ratio in the order requested
- ② Simplify (if possible)
- ③ If it's improper, leave it improper
↳ Why? Because a ratio is a comparison of $\frac{2}{3}$ quantities

Equivalent Ratios: ratios that have the same value

ex: $6 : 8$
 \swarrow
 $3 : 4$

Yes

$9 : 12$
 \swarrow
 $3 : 4$

They both reduce to the same ratio

ex: $6 \text{ mo} : 2 \text{ yrs}$
 \swarrow
 $6 \text{ mo} : 24 \text{ mo}$
 \swarrow
 $1 : 4 \text{ months}$

NO

$8 \text{ mo} : 3 \text{ yrs}$
 \swarrow
 $8 \text{ mo} : 36 \text{ mo}$
 \swarrow
 $2 : 9 \text{ months}$

When possible
change to
like labels

Lesson 6-2

Rates & Unit Rates (p 287-292)

Unit: a term of measurement

↳ Examples: sec, in, ft, yd, m, min, mi
yrs, C, lb, hr, pints, kg,
km, oz, qt, gal

Rate: a ratio that compares two unlike units

Example
(unlike units)

5 cars in 30 sec

Non-Example
(like units)

3 sec to 10 sec

Unit Rate: a rate that is simplified, so the denominator is 1

Rate

vs

Unit Rate

$\frac{70 \text{ miles}}{2 \text{ hrs}} \div 2$

$\frac{2 \text{ hrs}}{2}$

$\frac{35 \text{ mi}}{1 \text{ hr}}$

1 hr

35 mi per hr

ex: 18 people in 3 vans

$$\frac{18 \div 3}{3 \div 3} = \frac{6}{1}$$

6 people per van

- ① Write the rate in fraction form
- ② Divide so the denominator is 1.
- ③ rewrite the answer using "per" and labels

ex: Desiree earns \$280 in 40 hours.
What is her hourly rate?

$$\frac{280 \div 40}{40 \div 40} = \frac{7}{1} \quad \$7 \text{ per hour}$$

ex: 65 miles in 2.6 gallons

$$\frac{65 \div 2.6}{2.6 \div 2.6} = \frac{25}{1}$$

25 miles per gallon

$$\begin{array}{r} 25. \\ 2.6 \overline{) 65.0} \\ \underline{-52} \\ 130 \\ \underline{130} \\ 0 \end{array}$$

☺

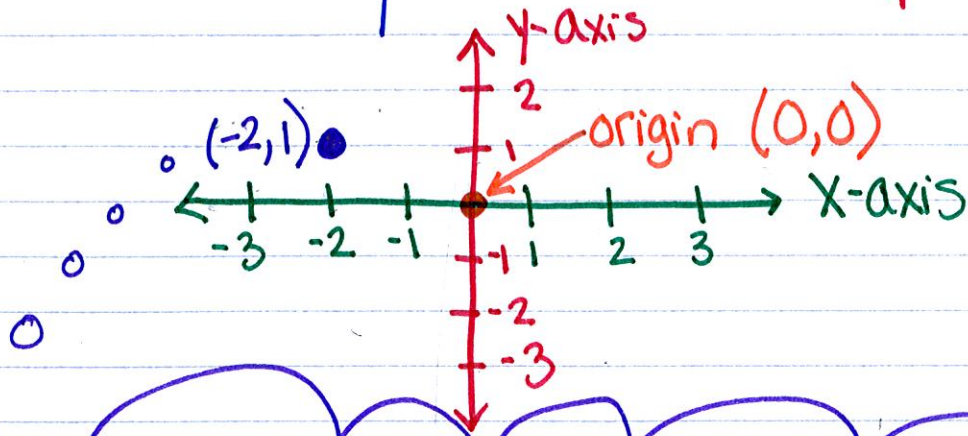
Lesson 6-3

2/10/12 Slope

(p 293-297)

FIVE STAR

FIVE STAR



Ordered pair → a pair of numbers that make a point to show location (x, y)

Show Slope Dube HERE

FIVE STAR

FIVE STAR



+ puff puff positive

nice negative



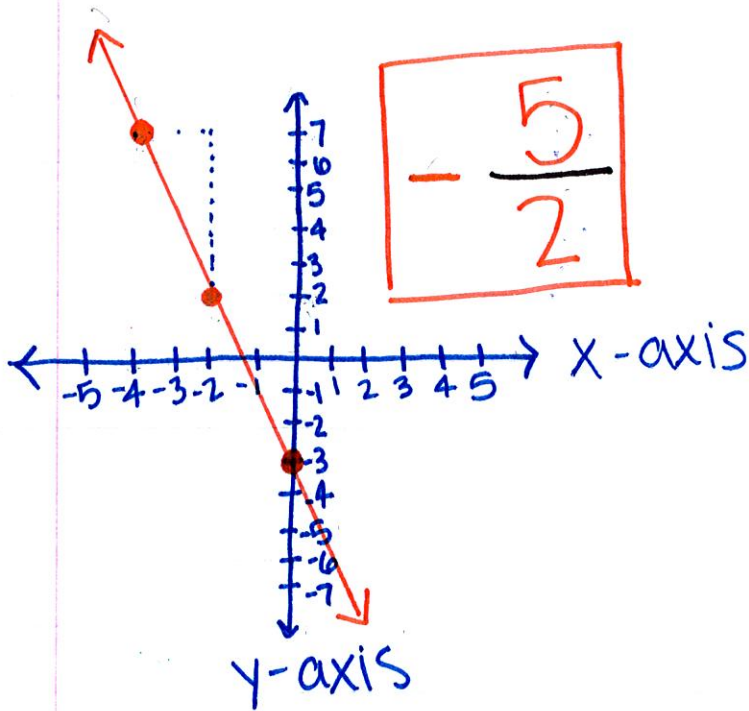
This is Zero fun



Undefined

Slope : rate of change between any 2 points on a line.

$$\frac{\text{change in } y}{\text{change in } x} \rightarrow \frac{\text{RISE}}{\text{RUN}}$$



① Determine if the slope is positive or negative.

② Determine the $\frac{\text{Rise}}{\text{Run}}$

③ Reduce if possible

* OK to leave improper

Lesson 6-3

Rate of Change (p 293-297)
(a special kind of Ratio)

(comparison of 2 things)

Rate of Change: a rate that describes how one quantity changes in relation to another.

Car Wash

# of cars	money (\$)
+5 ↙ 5	\$40 ↘ +40
+5 ↙ 10	\$80 ↘ +40
+5 ↙ 15	\$120 ↘ +40
+5 ↙ 20	\$160 ↘ +40

Find the Rate of change:

① Write the rate as a fraction.

* Decide the order of your labels first.

$$\frac{\$40}{5 \text{ car}} \div 5 = \frac{8}{1} \quad \boxed{\$8 \text{ per car}}$$

② Find the unit rate.

* Divide so the denominator is 1.

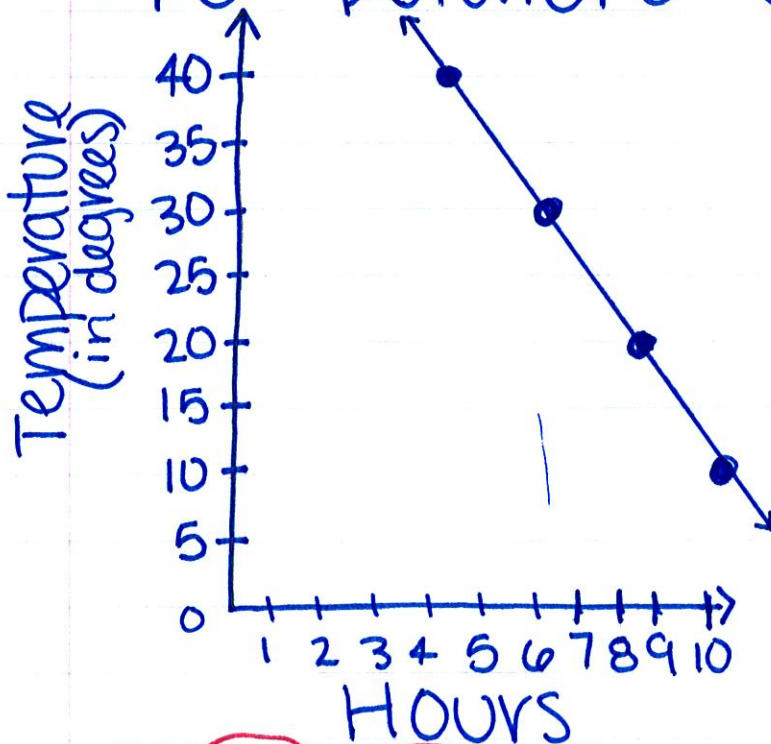
* Rewrite the answer using the word "per" and labels.

Baby Age (mo.)	weight (lbs)
0	0
+3 ↓ 3	12 ↓ +12
+3 ↓ 6	24 ↓ +12
+3 ↓ 9	36 ↓ +12

$$\frac{12 \text{ lbs}}{3 \text{ mo.}} \div 3 = \frac{4}{1}$$

4 lbs per month

Temperature Change



X hours	Y temp.
+2 ↓ 4	40° ↓ -10
+2 ↓ 6	30° ↓ -10
+2 ↓ 8	20° ↓ -10
+2 ↓ 10	10° ↓ -10

$$\frac{-10^\circ}{2 \text{ hr.}} \div 2 = \frac{-5}{1}$$

-5° per hour

* Make a chart to organize the information

Lesson 6-6

Proportions (p310-315)

Proportion: 2 equal ratios (or fractions)

$$7 \times 20 = 140$$

$$35 \times 4 = 140$$

$\frac{20 \text{ students}}{4 \text{ teachers}}$	\leftrightarrow	$\frac{35 \text{ students}}{7 \text{ teachers}}$
--	-------------------	--

Their cross products are equal.

Determine if the ratios are proportional

ex: $\frac{6}{14} = \frac{9}{21}$

Yes!

Solve the proportion:

ex: $\frac{2}{3} = \frac{w}{15}$

① Show the cross product.
↳ go the variable direction first.

• $3w = 15 \cdot 2$ ② Multiply

• $\frac{3w}{3} = \frac{30}{3}$
 $w = 10$

③ Isolate the variable by dividing BOTH sides by the number in front of the variable.
Ⓜ Solve!

$$\frac{8}{n} = \frac{10}{15}$$

$$10n = 15 \cdot 8$$

$$\frac{10n}{10} = \frac{120}{10}$$

$$n = 12$$

* No "times" sign needed with the variable.

* Use the division bar
↳ not "÷" sign.

Lesson 6-6 (p310-315)

Setting Up Proportion Story Problems

ex) A train traveled 720 km in 9 hours.
How far would travel in 11 hours?

$$\frac{720 \text{ km}}{9 \text{ hrs}} = \frac{r \text{ km}}{11 \text{ hrs}}$$

$$9r = 720 \cdot 11$$

$$\frac{9r}{9} = \frac{7920}{9}$$

$$r = 880 \text{ km}$$

DON'T FORGET!

* the "=" in the proportion.

* the variable in the proportion.

* all 4 labels in the proportion

* the label in the answer!

You write it how you read it.

ex) A printing press can print 350 sheets in 4 min.
How long would it take to print 525 sheets?

$$\frac{350 \text{ sheets}}{4 \text{ min}} = \frac{525 \text{ sheets}}{b \text{ min}}$$

① Set up a blank proportion.

② Fill in the labels

③ Fill in the numbers.

④ Solve using proportion steps.