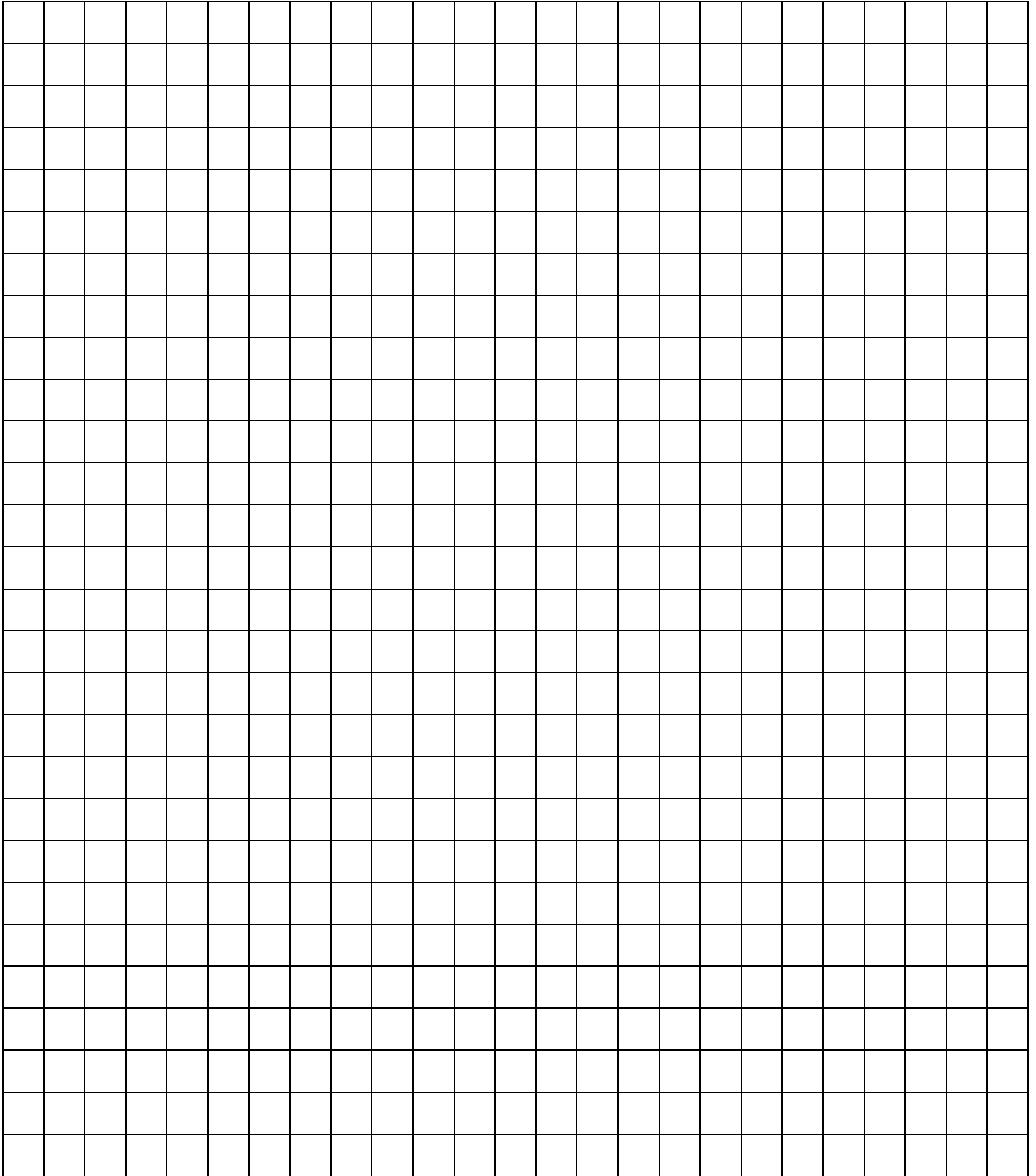Name: _____   Date: _____

Rate your understanding of each word.

+   means understand well

✔   means some understanding

–   means don't know

Word/Phrase	+	✔	–	Example	Definition
Greatest Common Factor (GCF)					
Least Common Multiple (LCM)					
Denominator					
Numerator					
Equivalent Fractions					
Integer					
Ratio					
Proportion					
Percent					

Name _____ Date _____

Find the greatest common factor for each set of numbers.

1. 6, 24   _____

2. 12, 32   _____

3. 30, 90   _____

4. 15, 24   _____

5. 32, 64   _____

Unit 3, Activity 2, Greatest Common Factors with Answers

Name _____   Date _____

Find the greatest common factor for each set of numbers.

1. 6, 24 _____6_____

2. 12, 32 _____4_____

3. 30, 90 _____30_____

4. 15, 24 _____3_____

5. 32, 64 _____32_____

Name _____   Date _____

Find the least common multiple for each set of numbers.

1. 6, 10   _____

2. 2, 12   _____

3. 3, 9   _____

4. 5, 12   _____

5. 6, 8   _____

Name _____   Date _____

Find the least common multiple for each set of numbers.

      1. 6, 10   _____30_____

      2. 2, 12   _____12_____

      3. 3, 9   _____9_____

      4. 5, 12   _____60_____

      5. 6, 8   _____24_____

Unit 3, Activity 4, Finding LCM

Name _____   Date _____

1.   DJ 100 gives away a $100 bill for every 100th caller. Every 30th caller receives free concert tickets. How many callers must get through before one of them receives *both* a $100 and a concert ticket?

2.   Two bikers are riding a circular path. The first rider completes a round in 12 minutes. The second rider completes a round in 18 minutes. If they both started at the same place and time and go in the same direction, after how many minutes will they meet again at the starting point?

3.   Two ferry boats leave the dock at the same time. One of the boats returns to the dock every 25 minutes. The other ferry boat returns every 30 minutes. How long will it be before the ferry boats return to the dock at the same time?

4.   Matthew goes hiking every 12 days and swimming every 6 days. He did both kinds of exercise today. How many days from now will he go both hiking and swimming again?

5.   Jenny wears her Khaki shorts every 6 days and her polka dot shirt every 10 days. If she wore them both on May 1st, when will she wear them both on the same day again?

Unit 3, Activity 4, Finding LCM with Answers

Name _____ Date _____

1.   DJ 100 gives away a $100 bill for every 100th caller. Every 30th caller receives free
     concert tickets. How many callers must get through before one of them receives *both* a
     $100 and a concert ticket?
     100:   100 ÷ 2, 50 ÷ 2, 25 ÷ 5, 5 ÷ 5   2, 2, 5, 5
     30:   30 ÷ 2, 15 ÷ 3, 5 ÷ 5   2, 3, 5
     LCM = 2 × 2 × 3 × 5 × 5 = 300

     Every 300th caller will receive $100 and concert tickets.

2.   Two bikers are riding a circular path. The first rider completes a round in 12 minutes. The
     second rider completes a round in 18 minutes. If they both started at the same place and
     time and go in the same direction, after how many minutes will they meet again at the
     starting point?
     12:   12 ÷ 2, 6 ÷ 2, 3 ÷ 3   2, 2, 3
     18:   18 ÷ 2, 9 ÷ 3, 3 ÷ 3   2, 3, 3
     LCM = 2 × 2 × 3 × 3 = 36

     Both riders will meet again at the starting point in 36 minutes.

3.   Two ferry boats leave the dock at the same time. One of the boats returns to the dock
     every 25 minutes. The other ferry boat returns every 30 minutes. How long will it be
     before the ferry boats return to the dock at the same time?
     25:   25 ÷ 5, 5 ÷ 5   5, 5
     30:   30 ÷ 2, 15 ÷ 3, 5 ÷ 5   2, 3, 5
     LCM = 2 × 3 × 5 × 5 = 150

     Both ferry boats will be at the dock every 150 minutes.

4.   Matthew goes hiking every 12 days and swimming every 6 days. He did both kinds of
     exercise today. How many days from now will he go both hiking and swimming again?
     12:   12 ÷ 2, 6 ÷ 2, 3 ÷ 3   2, 2, 3
     6:   6 ÷ 2, 3 ÷ 3   2, 3
     LCM = 2 × 2 × 3 = 12

     Matthew will hike and swim in the same day again in 12 days.

5.   Jenny wears her Khaki shorts every 6 days and her polka dot shirt every 10 days. If she
     wore them both on May 1st, when will she wear them both on the same day again?
     10:   10 ÷ 2, 5 ÷ 5   2, 5
     6:   6 ÷ 2, 3 ÷ 3   2, 3
     LCM = 2 × 3 × 5 = 30

     Jenny will wear her khaki shorts with her polka dot shirt again on May 31st.

Name _____   Date _____

Solve.

1. A florist has 36 roses and 27 tulips she must use to create bouquets. What is the largest number of bouquets she can make without having any flowers left over?

2. Suppose you have 60 pencils and 90 pens and you want to make packages of pencils and pens to donate to your school for students who cannot afford these supplies. What is the maximum number of packages you can make using all items, and how many pencils and pens will be in each package?

3. During the summer months, one ice cream truck visits Jeannette's neighborhood every 4 days and another ice cream truck visits her neighborhood every 5 days. If both trucks visited today, when is the next time both trucks will visit on the same day?

4. Mrs. Hernandez waters one of her plants every 3 days and another plant every 7 days. If she waters both plants today, when is the next time both plants will be watered on the same day?

Name _____   Date _____

Solve.

1. A florist has 36 roses and 27 tulips she must use to create bouquets. What is the largest number of bouquets she can make without having any flowers left over?
   Roses: 1, 2, 3, 4, 6, 9, 12, 18, 36
   Tulips: 1, 3, 9, 27
   The GCF is 9 so the florist can make 9 bouquets.

2. Suppose you have 60 pencils and 90 pens and you want to make packages of pencils and pens to donate to your school for students who cannot afford these supplies. What is the maximum number of packages you can make using all items, and how many pencils and pens will be in each package?
   Pencils: 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60
   Pens: 1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90
   You could make 30 packages. Each package would have 2 pencils and 3 pens.

3. During the summer months, one ice cream truck visits Jeannette's neighborhood every 4 days and another ice cream truck visits her neighborhood every 5 days. If both trucks visited today, when is the next time both trucks will visit on the same day?
   4 – 4, 8, 12, 16, 20, 24
   5 – 5, 10, 15, 20, 25
   It will be 20 days before both trucks visit on the same day again.

4. Mrs. Hernandez waters one of her plants every 3 days and another plant every 7 days. If she waters both plants today, when is the next time both plants will be watered on the same day?
   3 – 3, 6, 9, 12, 15, 18, 21, 24, 27, 30
   7 – 7 ,14, 21
   It will be 21 days before both plants are watered on the same day again.

Name _____   Date _____

| 50 Meter Freestyle ||
Athlete	Time (seconds)
A. Addison	26.99
B. Bier	27.03
B. Blalock	27.42
G. Gunter	26.74
H. Harper	26.73
K. Knight	27.48
R. Riddell	26.99
S. Stelly	26.51
T. Thompson	27.10

1. Who won the race?

2. Who came in last place?

3. Rank the swimmers in order from first to last.

4. Write three comparison statements comparing the times.

5. Write each of the comparisons in number 4 using symbols.

Name _____   Date _____

50 Meter Freestyle	
Athlete	Time (seconds)
A. Addison	26.99
B. Bier	27.03
B. Blalock	27.42
G. Gunter	26.74
H. Harper	26.73
K. Knight	27.48
R. Riddell	26.99
S. Stelly	26.51
T. Thompson	27.10

1. Who won the race? *S. Stelly*

2. Who came in last place? *K. Knight*

3. Rank the swimmers in order from first to last.
   1st -S. Stelly 2nd – H. Harper 3rd – G. Gunter 4th – A. Addison and R. Riddell 6th – B. Bier 7th – T. Thompson 8th – B. Blalock 9th – K. Knight

4. Write three comparison statements comparing the times. *Answers will vary*
   Sample answers: 26.99 is a longer amount of time than 26. 51, 27.10 is a shorter amount of time than 27.42, 26. 51 is a shorter amount of time than 26.99

5. Write each of the comparisons in number 4 using symbols. Answers will vary.
   Sample answers: 26.99 > 26.51, 27.10 < 27.42, 25.51 < 26.99

Unit 3, Activity 10, Ratio Notes

Name _____   Date _____

A **ratio** is a comparison of two quantities.

1. A ratio can compare a part to a _____ or a part to a _____.

Part to Part

2. John has 4 CDs for every 7 DVDs.   Ratio is = _____

3. Sally has 9 DVDs for every 6 CDs.   Ratio is = _____

Part to Whole

Stacey has a total of 25 CDs and DVDs. In her music collection, there are 7 CDs.

4. What is the ratio of CDs to the total?   _____

5. What is the ratio of DVDs to the total?   _____

6. What is the ratio of DVDs to CDs?   _____

7. What is the ratio of CDs to DVDs?   _____

8. How are these ratios alike?

9. How are they different?

10. Are they equivalent?

Equivalent Ratios

$$\frac{3}{5} = \frac{6}{10} = \frac{12}{20}$$

1	2	3	4	5	6
4	8	12	16	20	24

Try it!

11. Find two ratios equivalent to $\frac{2}{3}$.   _____

Complete the ratio table.

2	4	6	**a**	10	12
6	12	18	24	30	**b**

12. _____

13. _____

Proportions

There are 12 teachers and 288 students at Gator Middle School. There are 15 teachers and 360 students at Eagle Middle School.

14. Are the ratios of teachers to students at the two schools equal? _____

Unit 3, Activity 10, Ratio Notes with Answers

Name _____   Date _____

A **ratio** is a comparison of two quantities.

1. A ratio can compare a part to a <u>part</u> or a part to a <u>whole</u>.

Part to Part

     2. John has 4 CDs for every 7 DVDs.   Ratio is = <u>4:7, 4 to 7, or 4/7</u>

     3. Sally has 9 DVDs for every 6 CDs.   Ratio is = <u>9:6, 9 to 6, 9/6</u>

Part to Whole

     Stacey has a total of 25 CDs and DVDs. In her music collection, there are 7 CDs.

     4. What is the ratio of CDs to the total?   <u>7 to 25</u>

     5. What is the ratio of DVDs to the total?   <u>18 to 25</u>

     6. What is the ratio of DVDs to CDs?   <u>18 to 7</u>

     7. What is the ratio of CDs to DVDs?   <u>7 to 18</u>

     8. How are these ratios alike?   <u>The first 2 ratios are both part to whole ratios.</u>

     9. How are they different?   <u>The third and fourth ratios are both part to part ratios.</u>

     10. Are they equivalent?   <u>None of the ratios are equivalent because they are all comparing different things.</u>

Equivalent Ratios

$$\frac{3}{5} = \frac{6}{10} = \frac{12}{20}$$

1	2	3	4	5	6
4	8	12	16	20	24

     Try it!

     11. Find two ratios equivalent to $\frac{2}{3}$.   <u>Answers will vary</u>

Complete the ratio table.

2	4	6	**a**	10	12
6	12	18	24	30	**b**

12.	8
13.	36

Proportions

There are 12 teachers and 288 students at Gator Middle School. There are 15 teachers and 360 students at Eagle Middle School.

14. Are the ratios of teachers to students at the two schools equal?
The ratio of teachers to students at Gator Middle School is 12 to 288. The ratio of teachers to students at Eagle Middle School is 15 to 360.

$$\frac{12}{288} = \frac{1}{24} \qquad \frac{15}{360} = \frac{1}{24}$$ *Since both ratios simplify to* $\frac{1}{24}$ *they are equal.*

Unit 3, Activity 10, Ratio Practice

Name _____   Date _____

1. Sue got 8 out of 10 questions correct on her test. What type of ratio is 8:10?

2. It rained 3 out of the 4 days we were on vacation. What type of ratio is 3:1?

Grade	Boys	Girls
5th	75	80
6th	100	62
7th	80	68

3. Use the information from the table to write 4 ratios.

4. Complete the ratio table

5	10	15	20	a	30
35	70	b	140	175	210

a. _____

b. _____

5. Are the ratios 3 to 4 and 6:8 proportional? Explain your reasoning.

6. Are the ratios 7:1 and 4:28 proportional? Explain your reasoning.

Unit 3, Activity 10, Ratio Practice with Answers

Name _____   Date _____

1. Sue got 8 out of 10 questions correct on her test. What type of ratio is 8:10? *Part to whole*

2. It rained 3 out of the 4 days we were on vacation. What type of ratio is 3:1? *Part to part*

Grade	Boys	Girls
5th	75	80
6th	100	62
7th	80	68

3. Use the information from the table to write 4 ratios.

Answers will vary

4. Complete the ratio table

5	10	15	20	a	30
35	70	b	140	175	210

    a.   25

    b.   105

5. Are the ratios 3 to 4 and 6:8 proportional? Explain your reasoning. *Yes*

6. Are the ratios 7:1 and 4:28 proportional? Explain your reasoning. *no*

We won 17 games and lost 3	Our class has 12 girls out of 30 students	5 out of 10 students know Spanish	It snowed 10 out of 15 days
It was cloudy 5 days and sunny 2 days	We have 3 cats and 4 dogs	4 fish for every turtle	10 black marbles and 4 red marbles
1 circle to 5 squares	16 ducks to 7 geese	256 miles to 8 gallons	13 blue shirts to 11 white shirts

Name _____   Date _____

Determine if each ratio is part to part or part to whole. Then solve.

1.   Jenny attended 18 out of 25 tutoring sessions. What percent of the tutoring
        sessions did she attend?

2.   Jack received 31 out of 50 votes for student council president. What percent
        of the votes did Jack receive?

3.   3 out of 5 teenagers prefer barbeque chips. What percent of teenagers prefer
        barbeque chips?

4.   People preferring cheesy puffs outnumbered those who prefer tortilla chips
        by a ratio of 7 to 3. What percent of people prefer tortilla chips?

5.   This year the basketball team won 20 games and lost 5. What percent of the
        games did the team win?

Name _____   Date _____

Determine if each ratio is part to part or part to whole. Then answer the question.

1.   Jenny attended 18 out of 25 tutoring sessions. What percent of the tutoring
      sessions did she attend?

      part to whole ratio   *18 of 25* $\dfrac{18 \times 4}{25 \times 4} = \dfrac{72}{100}$ *72 out of 100 equals 72%.*

      Jenny attended 72% of the tutoring sessions.

2.   Jack received 31 out of 50 votes for student council president. What percent
      of the votes did Jack receive?

      part to whole ratio $\dfrac{31}{50}$ $\dfrac{31 \times 2}{50 \times 2} = \dfrac{62}{100}$ *62 out of 100 equals 62%.*

      Jack received 62% of the vote for student council president.

3.   3 out of 5 teenagers prefer barbeque chips. What percent of teenagers prefer
      barbeque chips?

      part to whole ratio   3:5 $\dfrac{3 \times 20}{5 \times 20} = \dfrac{60}{100}$ 60 out of 100 equals 60%.
      60% of teenagers prefer barbeque chips.

4.   People preferring cheesy puffs outnumbered those who prefer tortilla chips
      by a ratio of 7 to 3. What percent of people prefer tortilla chips?

      part to part ratio   7: 3
      part to whole ratio   3:10 $\dfrac{3 \times 10}{10 \times 10} = \dfrac{30}{100}$ *30 out of 100 equals 30%.*
      30% of the people surveyed prefer tortilla chips.

5.   This year the basketball team won 20 games and lost 5. What percent of the
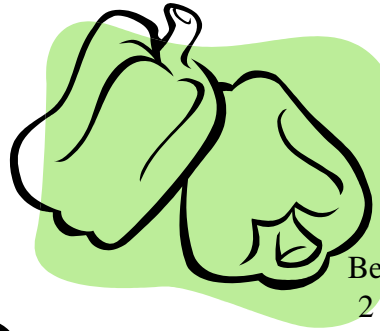   games did the team win?
      part to part ratio   20:5
      part to whole ratio   20:25 $\dfrac{20 \times 4}{25 \times 4} = \dfrac{80}{100}$ *80 out of 100 equals 80%.*
      The basketball team won 80% of their games.

Watermelon
$4.99
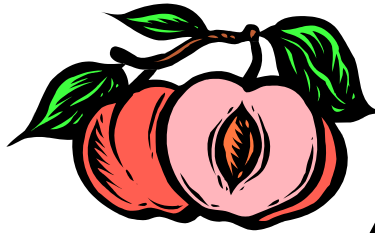
Bell Peppers
2 for $1.00

Peaches
$1.69 lb.

Corn
6 for $1.98

POTATOES
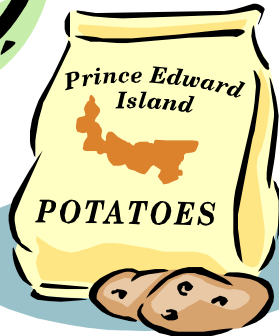
Tomatoes
$1.29 lb.

5 lb. bag of potatoes
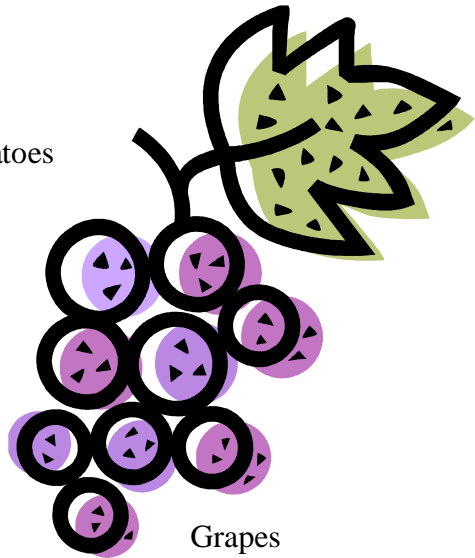$2.99

3 lb. bag of onions
$1.69

Apples
$1.19 lb.

Grapes
$0.99 lb.

Unit 3, Activity 12, Rates

Name _____   Date _____

1. Jack's car can be driven 480 miles with 15 gallons of gasoline. Make a rate table showing the number of miles his car can be driven with 1, 2, 3, … 10 gallons of gas.

Gallons of gas	1	2	3	4	5	6	7	8	9	10
Miles driven										

Choose whether each is an example of a _rate_ or a _unit rate_.

2. My new car gets 23 miles per gallon on the highway!   _____

3. Nola Cola is on sale, six for $2.50!   _____

4. DVDs are on sale, 5 for $44.95!   _____

5. Ice cream sandwiches cost $.50 each!   _____

Solve the following problems:

6. The local bakery has cupcakes on sale, $3.00 for 2 cupcakes. You have $20. How many can you buy? (Tax not included.)

7. Jack and Jill were driving at a constant rate along a hilly country road. Jack drove 5 miles in 15 minutes. How far did he drive in 6 minutes?

8. A chocolate chip cookie cake has about 175 calories for 35 grams of cookie cake. Christy ate 50 grams of cookie cake, how many calories was this?

9. CD's are on sale at The Rock Shop, 5 for $65. How much does each CD cost? Show your work.

10. At The Pop Shop, CD's are on sale, 4 for $50. Who has the best buy, The Pop Shop or The Rock Shop? Show your work.

Unit 3, Activity 12, Rates with Answers

Name _____   Date _____

1.   Jack's car can be driven 480 miles with 15 gallons of gasoline. Make a rate table
       showing the number of miles his car can be driven with 1, 2, 3, … 10 gallons of gas.

Gallons of gas	1	2	3	4	5	6	7	8	9	10
Miles driven	*32*	*64*	*96*	*128*	*160*	*192*	*224*	*256*	*288*	*320*

Choose whether each is an example of a _rate_ or a _unit rate_.

2. My new car gets 23 miles per gallon on the highway!   *unit rate*_____

3. Nola Cola is on sale, six for $2.50!   *rate*_____

4. DVDs are on sale, 5 for $44.95!   *rate*_____

5. Ice cream sandwiches cost $.50 each!   *unit rate*_____

Solve the following problems:

6. The local bakery has cupcakes on sale, $3.00 for 2 cupcakes. You have $20. How many can
    you buy? (Tax not included.) *Cupcakes are $1.50 each. 20 ÷ 1.5 = 13.333 You can buy 13
    cupcakes.*

7. Jack and Jill were driving at a constant rate along a hilly country road. Jack drove 5 miles in
    15 minutes. How far did he drive in 6 minutes? *It takes Jack 3 minutes to drive a mile, so in
    6 minutes he can drive 2 miles.*

8. A chocolate chip cookie cake has about 175 calories for 35 grams of cookie cake. Christy ate
    50 grams of cookie cake, how many calories was this? *175 ÷ 35 = 5 Each gram of cookie
    cake is 5 calories, so 50 grams of cookie cake would be 250 calories.*

9. CD's are on sale at The Rock Shop, 5 for $65. How much does each CD cost? Show your
    work. *65 ÷ 5 = 13 The CD's cost $13 each.*

10. At The Pop Shop, CD's are on sale, 4 for $50. Who has the best buy, The Pop Shop or The
     Rock Shop? Show your work. *50 ÷ 4 = 12.50 The CD's cost $12.50 each. The Pop Shop
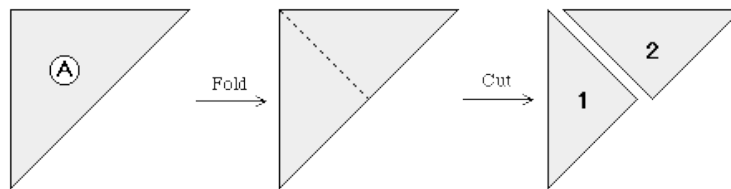   is a better deal.*

Unit 3, Activity 13, Tangrams

Fold and cut a square sheet of paper by following these instructions:

1.   Fold the square in half diagonally, unfold, and cut along the crease into two congruent triangles.
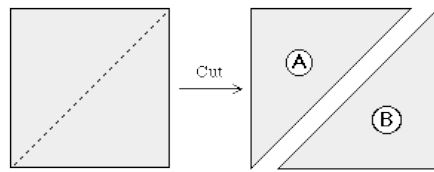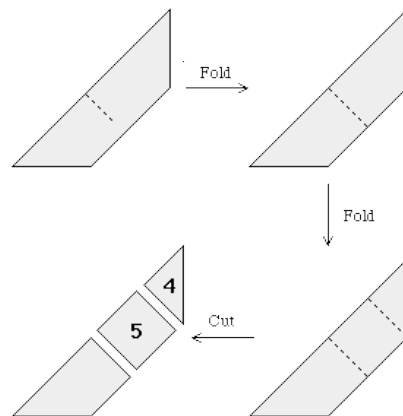
2.   Take one of these triangles. Fold in half, unfold, and cut along the crease. Set both of these triangles aside.

3.   Take the other large triangle. Lightly crease to find the midpoint of the longest side. Fold so that the vertex of the right angle touches that midpoint, unfold and cut along the crease. You will have formed a middle-sized triangle and a trapezoid. Set the middle-sized triangle aside with the two large-size triangles.
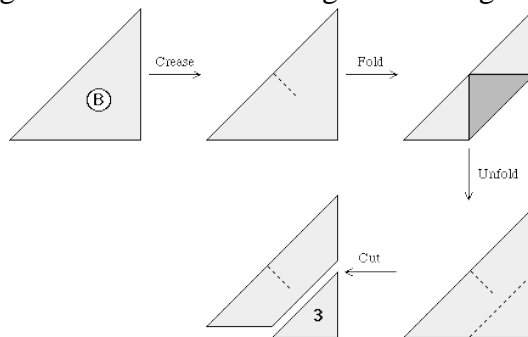
4.   Take the trapezoid, fold it in half, unfold, and cut. To create a square and a small-sized triangle from one of the trapezoid halves, fold the acute base angle to the adjacent right base angle and cut on the crease. Place these two shapes aside.

5.   To create a parallelogram and a small-sized triangle, take the other trapezoid half. Fold the right base angle to the opposite obtuse angle, crease, unfold, and cut. Place these two shapes aside.
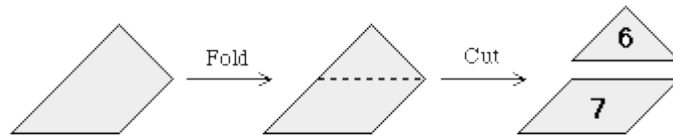
6.   You should have the 7 tangram pieces: 2 large congruent triangles
                                                    1 middle-sized triangle
                                                    2 small congruent triangles
                                                    1 parallelogram
                                                    1 square

7.   The pieces may now be arranged in many shapes. Try recreating the original square.

Name _____   Date _____

We're going on a road trip! Use the resources provided to plan your trip.

      Our destination is: _____

Use the resources provided to estimate the distance to your destination.

      The distance to our destination is: _____

If it takes you 5 hours to travel to your destination, approximately how many miles would you travel per hour (mph)? _____

Is that a reasonable speed to travel? Why or why not?   _____

_____

_____

If not, what would be a reasonable amount of time to get to your destination?   _____

If you used 8 gallons of gas on the way to your destination, how many miles per gallon (mpg) does your car get?_____

_____

Explain how you calculated the miles per gallon (mpg). _____

_____

_____