April 14, 2020

Dear Nandua Middle School students and families,

The NMS Math 6 Team hopes that you are all well. We have been working together to develop a plan to offer continuity of instruction amidst the extended school closure. Beginning April 14, 2020, the NMS Math 6 Team will provide activities and experiences that review and enrich concepts taught prior to March 13, 2020.

There are two ways students can take advantage of these experiences:

1. Google Classroom

or

2. Hardcopies of learning experiences that you received today.

Your teachers' office hours and contact information:

Betty Harmon-M-Th 9:00am-11:00am

757-710-8420; betty.harmon@accomack.k12.va.us

Chad McGregor-T & Th 9:00am-11:00am

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Susan Mears-Mon-Fri 1:00 - 3:00pm

757-999-3411; susan.mears@accomack.k12.va.us

Shari Aigner- M-T-Th 9am-noon

757-414-1204; sharon.aigner@accomack.k12.va.us

We look forward to seeing you as soon as we are all able.

Sincerely,

NMS Math 6 Team

Word Problems Week 1

1. Crackers contain 12 calories each and cookies contain 52 calories each. If you eat 5 crackers and 2 cookies, how many calories have you consumed in all?

2. Jenny bought a pair of pants for $19.99 and two shirts for $7.50 each. If she gave the cashier $40.00, how much change did she receive? (Assume no sales tax.)

3. 184 sixth graders are going on a field trip. There needs to be one chaperone for every four students. If a bus can hold 50 people, how many busses will they need for the trip?

4. A video game you want costs $59.29 at Games R Us. The same game costs $45.88 online, but you also have to pay $6.35 in shipping and handling. How much money will you save if you buy the game online?

5. You and your friend share a package of candies. You eat twice as many candies as your friend. If there were 36 candies in the bag, how many did you eat?

6. A group of 5 friends went out to dinner. The total bill including the tax and tip came to $83.95. If they split the bill evenly, how much money does each person owe?

Word Problems Week 3

1. You arrive at your friend's house at 7:45 on Friday night and stay over. Your mom picks you up Saturday morning. The drive home takes 18 minutes. It is 9:22 AM when you get home. How long were you at your friend's house?

2. Sandy plays tennis once every 6 six days. Jim plays once every 8 eight days. If they both played tennis today, in how many days will they play on the same day again?

3. Jarod made $12.75 mowing lawns one week. He made 3 times as much the following week. How much did he make altogether between the two weeks?

4. 4 out of 100 toys were defective. How many toys would you expect to be defective if 5,000 were manufactured?

5. Cassandra needs 5 yards of fabric to make her dress. She has 3 yards already. How much more does she need?

6. I have a box that is 5 inches wide, 2 inches deep, and 4 inches tall that I want to fill with sand. How much sand can I fit inside my box? (How much fits inside means that you need to find volume. The formula for volume of a rectangular prism is V = lwh. Volume = length x width x height.)

Word Problems Week 5

1. On a 20 question test, Sarah got 2 questions wrong. What percent of the test does she have correct?

2. 4 out of 5 people have at least 1 pet at home. Out of 300 people, how many would you expect to not have any pets?

3. You spent $24 more than Pam. If you spent $82, how much money did Pam spend? Write and solve an equation.

4. A piece of paper is 8 inches wide. You tape 7 pieces of paper together to make a banner. How long is your banner?

5. Which is a better deal: 30 fluid ounces of shampoo for $3.55 or 50 fluid ounces of shampoo for $6?

6. Your bill comes to $23.55 at a restaurant. How much money should you leave for a 20% tip?

Word Problems Week 7

1. You draw a rectangular picture that is 8 inches wide. It is 3 times as long as it is wide. What is the area of the picture?

2. A recipe calls for 3 quarts of chicken broth. How many cans do you need to buy if each can contains 24 fluid ounces?

3. A box of 30 munchkins contains 12 chocolate munchkins and 10 powder munchkins. The rest are glazed. What is the probability that you will pick a glazed munchkin if you pick one out randomly?

4. Jessica drank 2 1 3 glasses of water. That was twice as much as her sister drank. How many glasses of water did Jessica's sister drink?

5. Your dad just put up a border around your square bedroom that was 48 ft long. How many square feet of carpeting will you need to cover your bedroom floor?

6. You bought 8 dvds for $22 each and 4 dvds for $13 each. What is the average price you paid for each movie?

7. Jerry weighs 95 pounds. This is 15 pounds less than Mikey weighs. How much does Mikey weigh? Write and solve an equation.

8. Samantha spent $15.88 at a department store. She spent half as much at the bookstore as she did at the department store. She then spent $12.64 at a restaurant. She now has $33.85 left in her purse. How much did she have to begin with?

2. Tickets to a hockey game cost $45. You and 3 of your friends decide to go together. How much will your tickets cost all together? $180

3. Your macaroni and cheese recipe calls for 3 2 1 cups of milk. You're having company and you need to quadruple the recipe. How much milk will you need? cups

4. You have 4 yards of ribbon. You need to wrap 6 equal sized boxes with the ribbon. How many feet of ribbon can you use on each box? 2 feet

5. You flip a coin three times. What is the probability that you get heads all three times? 1/6

6. Your town got 3.44 inches of rain in June, 5.07 inches in July, and 4.28 inches in August. What was the average rainfall over these three months? inches

Week 5

1. On a 20 question test, Sarah got 2 questions wrong. What percent of the test does she have correct? 90%

2. 4 out of 5 people have at least 1 pet at home. Out of 300 people, how many would you expect to not have any pets? 60 people

3. You spent $24 more than Pam. If you spent $82, how much money did Pam spend? Write and solve an equation. Let x = amount Pam spent; x + 24 = 82; x = $58

4. A piece of paper is 2 1 8 inches wide. You tape 7 pieces of paper together to make a banner. How long is your banner? 59.5 inches

5. Which is a better deal: 30 fluid ounces of shampoo for $3.55 or 50 fluid ounces of shampoo for $6? 30 fluid ounces 30. Your bill comes to $23.55 at a restaurant. How much money should you leave for a 20% tip? $4.71

6. Your bill comes to $23.55 at a restaurant. How much money should you leave for a 20% tip? $4.71

? $155

Week 6

1. To rent a room for a party it costs $80 plus an additional $15 per hour. How much will it cost to rent a room for 5 hours

2. You want to start a necklace making business. You spend $0.68 on string for each necklace and $0.25 on beads for each necklace. You sell your necklaces for $2.00 each. If you sell 30 necklaces, how much profit will you make? $32.10

3. Mrs. Bell has 24 students. Mr. Dole has 36 students in his class. The two classes are working on the same project and so the students in each class need to be split up into equally sized groups. What is the maximum number of students that can be in each group? 12 students

4. 12 of the 30 students in Mrs. Smith's class are boys. What percent of the class is made up of girls? 60%

5. Laura wants to enlarge a picture she took at the beach to hang on her wall. The picture is 3 inches tall and 5 inches wide. If she wants the enlarged picture to be 2 feet wide, how tall will it need to be? 1.2 feet (or 14.4 inches)

6. There were 3 full pizzas sitting on a counter. If Joe ate $\frac{1}{4}$ of a pie, Rhonda ate $\frac{3}{8}$ of a pie, and Chris ate 4 slices, how many slices of pizza were left? (Assume each pie is cut into 8 slices.) 15 slices

7. Ron was able to run a mile in 7 minutes. Fred was only able to run 4,985 feet in 7 minutes. How much further did Ron run than Fred? 295 feet

Week

1. You draw a rectangular picture that is 8 inches wide. It is 3 times as long as it is wide. What is the area of the picture? 192 7

2. A recipe calls for 3 quarts of chicken broth. How many cans do you need to buy if each can contains 24 fluid ounces? 4 cans

3. A box of 30 munchkins contains 12 chocolate munchkins and 10 powder munchkins. The rest are glazed. What is the probability that you will pick a glazed munchkin if you pick one out randomly?

Answer Keys

Chapter 1

LESSON 1

Coached Example

To change a fraction to a percent, first write an equivalent fraction with a denominator of 100.

$\frac{1 \times 20}{5 \times 20} = \frac{20}{100}$

Convert the fraction to a decimal: $\frac{20}{100} = 0.2$

Convert the decimal to a percent by moving the decimal point to the right two places and writing a percent sign.

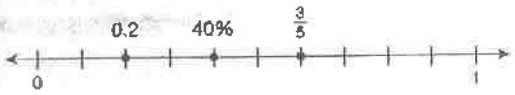
$0.2 = 20\%$

Chantal read 20% of her book.

Lesson Practice

1. C
2. C
3. B
4. D
5. C
6. D
7. C
8. B
9. A. $40\% = 0.4; \frac{3}{5} = \frac{(3 \times 20)}{(5 \times 20)} = \frac{60}{100} = 0.6$

   B.



LESSON 2

Coached Example

The ratio is comparing a part to a whole.

There are 8 comedies and 6 dramas.

Add. $8 + 6 = 14$

There are $8 + 6 + 3 + 7 = 24$ DVDs in all.

Write the ratio. 14 to 24

Simplify the ratio.

$\frac{14}{24} = \frac{7}{12}$, so 14 to 24 is the same as 7 to 12.

The ratio of comedies and dramas to total DVDs is 7 to 12.

Lesson Practice

1. B
2. D
3. D
4. D
5. D
6. A
7. C
8. A
9. A. 5:17

   B. 5 to 17, $\frac{5}{17}$

LESSON 3

Coached Example

Because 3 = 3, compare the fraction parts.

Multiples of 6: 6, 12, 18, 24

Multiples of 8: 8, 16, 24

The LCD of $\frac{5}{6}$ and $\frac{7}{8}$ is 24.

Then, write equivalent fractions with 24 as the denominator.

$\frac{5}{6} = \frac{20}{24}$

$\frac{7}{8} = \frac{21}{24}$

$3\frac{20}{24} < 3\frac{21}{24}$

$3\frac{5}{6} < 3\frac{7}{8}$

Lesson Practice

1. D
2. A
3. C
4. C
5. C
6. D
7. A
8. C
9. A. $\frac{1}{8}$, 18%, $\frac{8}{5}$, 8.1; Possible work: $\frac{1}{8} = 0.125$; $18\% = 0.18$; $\frac{8}{5} = 1\frac{3}{5} = 1\frac{6}{10} = 1.6$

   B. 1.7

LESSON 4

Coached Example

What integer represents a play in which the team neither gains yards nor loses yards? 0

A play that gains yards would be represented by a positive integer.

A play that loses yards would be represented by a negative integer.

5. C
6. C
7. D
8. A
9. A. Tuesday; No, it does not have the greatest absolute value; Possible explanation: Absolute value is the distance of a number from 0. The temperature from Wednesday, −6, is farther from 0 than 5.

   B. Wednesday; Yes, it has the greatest absolute value; Possible explanation: Absolute value is the distance of a number from 0. The temperature from Wednesday, −6, is farther from 0 than the temperatures of the other days, −4, 5, 2.

LESSON 7

Coached Example

The factor pairs of 121 are **1 × 121, 11 × 11**.

The factor pairs of 122 are **1 × 122, 2 × 61**.

The number **121** is a perfect square.

Lesson Practice

1. C
2. D
3. B
4. C
5. C
6. B
7. D
8. A
9. A. Yes, Stella is correct; Possible explanation: The perfect square of 7 is 49. The perfect square of 8 is 64. There are no integers between 7 and 8.

   B. No, Stella is incorrect; Possible explanation: The perfect square of 5 is 25, the perfect square of 6 is 36, and the perfect square of 7 is 49. There is only one perfect square from 30 through 39.

CHAPTER 1 REVIEW

1. C 6.2a
2. A 6.3b
3. C 6.4
4. B 6.3c
5. A 6.1
6. D 6.3a
7. A 6.2b
8. C 5.1
9. Perfect Square: 36, 64, 81
   Not Perfect Square: 18, 24, 42, 56, 72 6.4
10. 0.4, $\frac{2}{5}$ 6.2a
11. −5, $\frac{2}{1}$, 91 6.3a
12. $\frac{7}{8}$, 0.8, 65% 6.2b
13. Absolute Value Greater Than 6: −12, 7, −11, 19
    Absolute Value Less Than 6: 4, −5 6.3c
14. 2, 4, −1, −3 6.3b

Chapter 2

LESSON 8

Coached Example

Write an equation to represent the situation:

$2\frac{1}{3} + 3\frac{3}{4} = \square$

The fractions have **different** denominators, so find the **LCD** of $\frac{1}{3}$ and $\frac{3}{4}$.

Multiples of 3: **3, 6, 9, 12**

Multiples of 4: **4, 8, 12**

The LCD is **12**. Write equivalent fractions with **12** as the denominator.

$\frac{1}{3} = \frac{4}{12}$

$\frac{3}{4} = \frac{9}{12}$

Add the fraction parts.

$\frac{4}{12} + \frac{9}{12} = \frac{13}{12}$

Rewrite the sum as a mixed number.

$\frac{13}{12} = 1\frac{1}{12}$

Add the whole-number parts of the mixed numbers.

$2 + 3 = 5$

Add the sum of the whole-number parts and the sum of the fraction parts.

$5 + 1\frac{1}{12} = 6\frac{1}{12}$

Andrew used $6\frac{1}{12}$ cups of flour in all.

Lesson Practice

1. D
2. B
3. C
4. B
5. A
6. D

LESSON 12

Coached Example

The jackets cost **$86.56**.

The hats cost **$45.38**.

Add.

$$\begin{array}{r} 86.56 \\ +\ 45.38 \\ \hline 131.94 \end{array}$$

Subtract.

$$\begin{array}{r} 225.00 \\ -\ 131.94 \\ \hline 93.06 \end{array}$$

Melanie has **$93.06** left in the budget.

Lesson Practice

1. C
2. C
3. A
4. D
5. B
6. A
7. D
8. D
9. A. 6.32 daltons; Possible work:

$$\begin{array}{r} 78.96 \\ -\ 72.64 \\ \hline 6.32 \end{array}$$

B. 226.522 daltons; Possible work:

$$\begin{array}{r} 72.640 \\ 74.922 \\ +\ 78.960 \\ \hline 226.522 \end{array}$$

LESSON 13

Coached Example

Move the decimal point 1 place(s) to the right. Multiply by **10**.

$7.5 \times 10 = 75$

Move the decimal point in the dividend the same number of places to the right. Multiply by 10.

$145.5 \times 10 = 1455$

Write the problem vertically with the new divisor and dividend. Then divide. Show your work.

$$\begin{array}{r} 19.4 \\ 75\overline{)1455.0} \\ -75 \\ \hline 705 \\ -675 \\ \hline 300 \\ -300 \\ \hline 0 \end{array}$$

The quotient is **19.4**.

Each pound of tea leaves costs **$19.40**.

Lesson Practice

1. C
2. D
3. B
4. B
5. D
6. B
7. D
8. A
9. A. $0.85; Possible work:

$$\begin{array}{r} 0.85 \\ 62\overline{)52.70} \\ -\ 496 \\ \hline 310 \\ -\ 310 \\ \hline 0 \end{array}$$

$5.27 \div 6.2 = 52.70 \div 62$

B. $8.33; Possible work: $0.85 + 0.13 = 0.98$; $0.98 \times 8.5 = 8.33$

LESSON 14

Coached Example

Write an equation to represent the situation:

$-30 - 50 = ?$

What is the opposite of the number to be subtracted?

-50

Change subtraction to addition and add the opposite:

$-30 + (-50) = ?$

Apply the rules for adding two integers:

$30 + 50 = 80$

The lowest temperature in U.S. history is **$-80°F$**.

Lesson Practice

1. C
2. D
3. B
4. A

Chapter 3

LESSON 17

Coached Example

A line segment that has one endpoint at the center of a circle and the other endpoint on the circle is a **radius**. The center of the circle is at point *G*.

Line segments ***GA***, ***GC***, and ***GD*** have one endpoint at the center of the circle and the other endpoint on the circle. These line segments are **radii** of the circle.

A **chord** is a line segment connecting any two points on the circle. Line segments ***AB***, ***BC***, and ***AC*** connect two points on the circle. These line segments are **chords** of the circle.

A **diameter** is a chord of the circle that passes through the center of the circle. Line segment ***AC*** passes through the center of the circle. This line segment is a **diameter** of the circle.

The radii of the circle are $\overline{GA}$, $\overline{GC}$, and $\overline{GD}$.

The chords are $\overline{AB}$, $\overline{BC}$, and $\overline{AC}$.

The diameter is $\overline{AC}$.

Lesson Practice

1. A
2. B
3. D
4. C
5. A
6. D
7. B
8. C
9. A. $\overline{UT}$, $\overline{VS}$
   B. $\overline{RV}$, $\overline{RS}$

LESSON 18

Coached Example

Find the circumference, using the formula $C = 2\pi r$.

Substitute **3.14** for π and **5** for r.

$C \approx 2 \times 3.14 \times 5 \text{ in.} \approx 31.4 \text{ in.}$

The circumference is about **31.4 inches**.

Find the area, using the formula $A = \pi r^2$.

Substitute **3.14** for π and **5** for r.

$A \approx 3.14 \times 5 \text{ in.} \times 5 \text{ in.} = 78.5 \text{ in.}^2$

The area is about **78.5 square inches**.

Lesson Practice

1. C
2. B
3. C
4. B
5. B
6. D
7. D
8. C
9. A. 72.25π square feet; Possible work: $A = \pi r^2$; $r = \frac{1}{2}d$, $r = \frac{17}{2} = 8.5$; $r^2 = 8.5 \times 8.5 = 72.25$; $A = 72.25\pi$.
   B. 17π feet; Possible work: The length around the outside of a circle is the circumference, the formula for circumference is $C = \pi d$. $C = 17\pi$.

LESSON 19

Coached Example

The formula for the perimeter of a square is $P = 4s$.

$P = 4 \times 12 \text{ ft} = 48 \text{ ft}$

The formula for the area of a square is $A = s^2$.

$A = 12 \text{ ft} \times 12 \text{ ft} = 144 \text{ ft}^2$

The perimeter of the garden is **48 feet** and the area is **144 square feet**.

Lesson Practice

1. C
2. D
3. A
4. C
5. A
6. C
7. A
8. A
9. A. 216 square feet; Possible work: $A = l \times w$; $18 \times 12 = 216$
   B. 60 ft; Possible work: $P = 2l + 2w$; $2(12) + 2(18) = 24 + 36 = 60$

CHAPTER 3 REVIEW

1. C 6.7b
2. A 6.7c
3. C 6.7c
4. D 6.7c
5. A 6.7a
6. C 6.7c

B. Check that students drew a line of symmetry through one of the vertices. Possible explanation: A line of symmetry divides a regular pentagon into two congruent quadrilaterals. The line I drew is a line of symmetry.

CHAPTER 4 REVIEW

1. A 6.8b
2. A 6.8a
3. C 6.8b
4. D 6.9
5. D 6.9
6. B 6.8a
7. D 6.8b
8. A 6.8a, 6.8b
9. D 6.9
10. C 6.9
11. B 6.8b
12. **Congruent to $\overline{AB}$:** $\overline{CD}$, $\overline{JK}$; **Not Congruent to $\overline{AB}$:** $\overline{EF}$, $\overline{GH}$ 6.9
13. (3, 0); (−2, 0); (−6, 0) 6.8a, 6.8b
14. $\overline{KL}$ 6.9
15. **Quadrant I:** (2, 7); **Quadrant II:** (−4, 1); **Quadrant III:** (−1, −7), (−2, −2); **Quadrant IV:** (3, −5), (6, −3) 6.8a
16. 24 6.9
17. (−3, −4) 6.8b

Chapter 5

LESSON 22

Coached Example

How many friends were interviewed in all? 12

What fraction and percent of her friends picked baseball?

$\frac{6}{12} = \frac{1}{2} = 50\%$

What fraction and percent of her friends picked basketball?

$\frac{2}{12} = \frac{1}{6} = 16.\overline{6}\%$

What fraction and percent of her friends picked soccer?

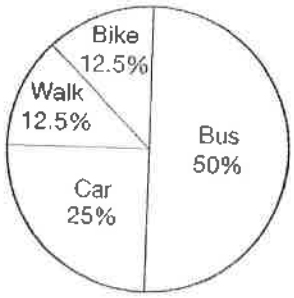
$\frac{4}{12} = \frac{1}{3} = 33.\overline{3}\%$

Check that students' circle graphs show $\frac{1}{2}$ baseball, $\frac{1}{6}$ basketball, and $\frac{1}{3}$ soccer and are labeled with appropriate percents.

Lesson Practice

1. D
2. A
3. D
4. B
5. C
6. C
7. A. 25%; Possible work: $80 - (40 + 10 + 10) = 20$; $\frac{20}{80} = \frac{1}{4} = 25\%$

B. **How Students Get to School**



LESSON 23

Coached Example

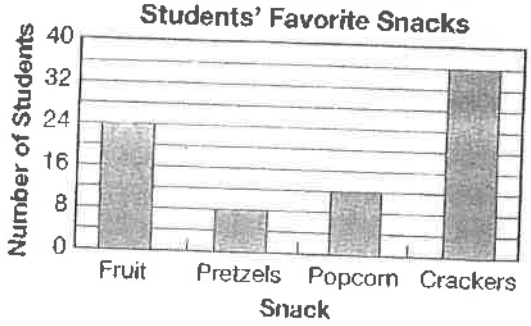
Fruit: 30% of 80 = 24

Pretzels: 10% of 80 = 8

Popcorn: 15% of 80 = 12

Crackers: 45% of 80 = 36

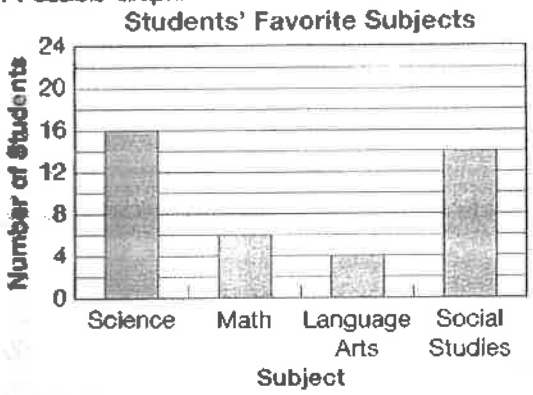
Possible graph:



Lesson Practice

1. A
2. B
3. C
4. B

11. Possible Graph:



6.10c

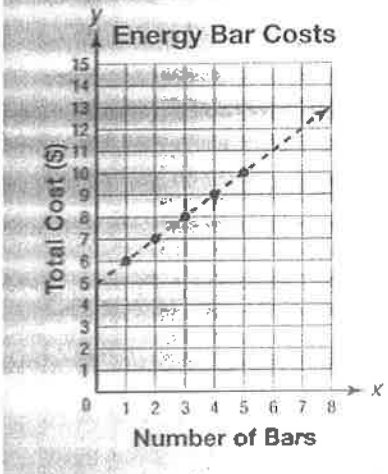
12. 1 6.11b

Chapter 6

LESSON 25

Coached Example

Possible graph:



Does the graph form a straight line? Yes

If extended, will it pass through the origin? No

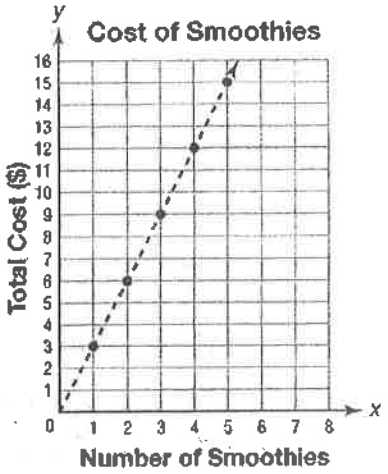
Based on this, is the relationship shown in the table proportional? Why or why not? No, because the relationship's graph passes through (0, 5) not (0, 0).

Is $\frac{6}{1}$ equivalent to $\frac{10}{5}$? Why or why not? No, because the factor that relates y to x in $\frac{6}{1}$ is 6 and the factor in $\frac{10}{5}$ is 2.

The ratios are not equivalent and the graph does not pass through the origin, so the relationship shown is not proportional.

Lesson Practice

1. D
2. C
3. D
4. B
5. B
6. B
7. A. Possible graph:



B. Yes, they show a proportional relationship. Possible explanation: All of the ordered pairs are in the same ratio: $\frac{y}{x} = \frac{3}{1} = \frac{6}{2} = \frac{9}{3} = \frac{12}{4} = \frac{15}{5}$. Also the ordered pairs form a straight line that, if extended, passes through the origin. Both of those facts indicate that the relationship is proportional.

LESSON 26

Coached Example

If 4 gumballs cost $2, then what is the price for 2 gumballs? **$1**

If 2 gumballs cost **$1**, then the gumballs cost **$0.50** each.

Multiply to find the cost of 3 gumballs:
$0.50 × 3 = $1.50

Multiply to find the cost of 5 gumballs:
$0.50 × 5 = $2.50

Number of Gumballs (x)	1	2	3	4	5
Total Cost, in $ (y)	0.50	1	1.50	2	2.50

The ratio table shows the unit price, **$0.50** per gumball, and several other equivalent rates.

4. C 6.13
5. C 6.12b, 6.12d
6. B 6.14b
7. D 6.14b
8. C 6.14a
9. C 6.12b, 6.12d
10. A 6.12b
11. B 6.12b
12. 32 6.13
13. 12 6.14b
14. 6; 24 6.12d
15. $\frac{24}{4}$; $\frac{12}{2}$; $\frac{6}{1}$; $\frac{42}{7}$ 6.12c
16. $x = 3$: $2x = 6$, $x + 6 = 9$;
    $x = 12$: $x - 9 = 3$; $\frac{x}{2} = 6$ 6.13
17. $\leq$ 6.14a
18. \$2.50 per cup; \$7.50 for 3 cups; \$15 for 6 cups 6.12a, 6.12b, 6.12d