April 14, 2020

Dear Nandua Middle School students and families,

I hope 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 I 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.

My office hours and contact information:

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

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

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

Sincerely,

Mrs. Harmon

Math 7

Week 1 Coach Chapter 1 Lessons 1 – 6; Chapter 1 Review

Week 2 Coach Chapter 2 Lessons 7-9; Chapter 2 Review

Week 3 Coach Chapter 3 Lessons 10-12; Chapter 3 Review

Week 4 Coach Chapter 4 Lessons 13-14; Chapter 4 Review

Week 5 Coach Chapter 5 Lessons 15-18; Chapter 5 Review

Week 6 Coach Chapter 6 Lessons 19-22

Week 7 Coach Chapter 6 Lessons 23-26; Chapter 6 Review

***There is a formula sheet in the back of the chapter book on page 211.

***Read over the first pages of each lesson. They will give you practice and examples.

***Remember to show your work. It will help you find where you make mistakes.

***Answer key to Coach problems and weekly word problems can be found at the back of this packet.

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 2

1. Molly gets an allowance of $25 per week. If she spends $3 each day Monday - Friday on lunch, and saves the rest, how much money will she have saved after 4 weeks?

2. Jamal is 5 inches taller than Ben and 2 inches shorter than Lacy. Lacy is 9 inches taller than her brother Zach. Zach is 4 ft 3 inches tall. How tall is Ben?

3. You buy 1.68 pounds of ground beef, 2.8 pounds of chicken, and 1.02 pounds of ground turkey. How much meat did you buy in all?

4. Billy ran mi, Nancy ran mi, and Heather ran mi. How far did they run altogether?

5. We drove 235 miles in 4 hours. What is the average speed at which we were driving?

6. You need 2.5 pounds of potatoes. If each potato weighs 5 ounces, how many potatoes will you need?

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 4

1. You go to "Ice Cream Palace" for dessert one day. You can get vanilla, chocolate, or twist ice cream. You have a choice of rainbow sprinkles, chocolate sprinkles, or no sprinkles. You can get your ice cream in a cup or a cone and they each come in small, medium, and large sizes. How many different combinations are there in all?

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?

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

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?

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

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?

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 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?

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?

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

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?

6. There were 3 full pizzas sitting on a counter. If Joe ate 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.)

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?

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?

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? 164 calories

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.) $5.01

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? 5 busses

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? $7.06

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? 24 skittles

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? $16.79

Week 2

1.. Molly gets an allowance of $25 per week. If she spends $3 each day Monday - Friday on lunch, and saves the rest, how much money will she have saved after 4 weeks? $40

2. Jamal is 5 inches taller than Ben and 2 inches shorter than Lacy. Lacy is 9 inches taller than her brother Zach. Zach is 4 ft 3 inches tall. How tall is Ben? 4 ft, 5 in

3. You buy 1.68 pounds of ground beef, 2.8 pounds of chicken, and 1.02 pounds of ground turkey. How much meat did you buy in all? 5.5 pounds

4. Billy ran 3 2 mi, Nancy ran 4 3 mi, and Heather ran 8 5 mi. How far did they run altogether? miles

5. We drove 235 miles in 4 hours. What is the average speed at which we were driving? 58.75 mph

6. You need 2.5 pounds of potatoes. If each potato weighs 5 ounces, how many potatoes will you need? 8 potatoes

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? 13 hours, 19 minutes

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? 24 days

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? $51.00

4. 4 out of 100 toys were defective. How many toys would you expect to be defective if 5,000 were manufactured? 200 toys

5. Cassandra needs 2 1 5 yards of fabric to make her dress. She has 6 5 3 yards already. How much more does she need? yards

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? 40 in3

Week 4

1. You go to "Ice Cream Palace" for dessert one day. You can get vanilla, chocolate, or twist ice cream. You have a choice of rainbow sprinkles, chocolate sprinkles, or no sprinkles. You can get your ice cream in a cup or a cone and they each come in small, medium, and large sizes. How many different combinations are there in all? 54 combinations

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?

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? cups

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? 144 sq ft

6. You bought 8 dvds for $22 each and 4 dvds for $13 each. What is the average price you paid for each movie? $19

7. Jerry weighs 95 pounds. This is 15 pounds less than Mikey weighs. How much does Mikey weigh? Write and solve an equation. Let x = Mikey's weight in pounds; $x - 15 = 95$; $x = 110$ lbs

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? $70.31

Answer Keys

Chapter 1

LESSON 1

Coached Example

To convert a percent to a decimal, **divide** the percent by **100** and drop the **percent sign**.

55% ÷ 100 = **0.55**

To convert a percent to a fraction, write a fraction using the percent as the **numerator** over a denominator of **100**.

$55\% = \frac{55}{100}$

Factors of 55: **1, 5, 11, 55**

Factors of 100: **1, 2, 4, 5, 10, 20, 25, 50, 100**

The GCF of 55 and 100 is **5**.

Divide the numerator and denominator by **5**.

$\frac{55}{100} = \frac{55 \div 5}{100 \div 5} = \frac{11}{20}$

The decimal **0.55** and the fraction $\frac{11}{20}$ are equivalent to 55%.

Lesson Practice

1. B
2. C
3. D
4. B
5. A
6. D
7. D
8. B
9. A. 0.84
   B. 84%

LESSON 2

Coached Example

$10^{-5} = \frac{1}{10^5} = \frac{1}{10 \times 10 \times 10 \times 10 \times 10}$

$= \frac{1}{100,000}$

Write the fraction as a decimal.

0.00001

Written as a fraction, 10^{-5} is $\frac{1}{100,000}$ and as a decimal is **0.00001**.

Lesson Practice

1. B
2. C
3. D
4. C
5. D
6. A
7. C
8. C
9. A
10. D
11. A. $\frac{1}{100,000,000}$
    B. 0.00000001

LESSON 3

Coached Example

Put the decimal point after the first nonzero digit, starting from the left to form a factor greater than or equal to **1** and less than **10**.

The first factor is **2.5**.

The decimal point was moved **4** places to the **right**.

Since the original number is less than **1**, the exponent will be **negative**.

The second factor is 10^{-4}.

$0.00025 = 2.5 \times 10^{-4}$

0.00025 in scientific notation is 2.5×10^{-4}.

Lesson Practice

1. A
2. B
3. B
4. C
5. C
6. C
7. A
8. B
9. D
10. D
11. A. 2.49
    B. 2.49×10^4

LESSON 4

Coached Example

$3 = 3$

$3\frac{1}{8} = 3.125$

$35\% = 0.35$

$3.1 \times 10^2 = 310$

The greatest number is **310**.

The least number is **0.35**.

Compare the tenths:
3.25 > 3.125 > 3

Write all the decimals from greatest to least: **310, 3.25, 3.125, 3, 0.35**

The original numbers from greatest to least are 3.1×10^2, **3.25**, $3\frac{1}{8}$, **3, 35%**.

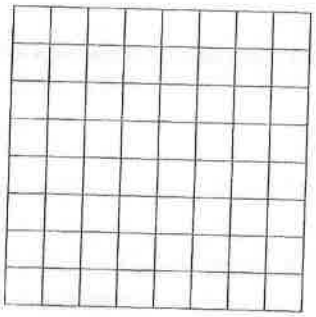
Lesson Practice

1. A
2. D
3. D
4. D
5. C
6. B
7. C
8. A
9. A. Possible answer: 5.5×10^{-1}
   B. Possible answer: 85%

LESSON 5

Coached Example

Draw a square with a total area of **64** square units.



The length of each side is **8** units.

The square root of 64 is **8** because $8 \times 8 = 64$.

Lesson Practice

1. B
2. C
3. D
4. A
5. B
6. D
7. C
8. C
9. A. 13

   B. Students should draw a 13 by 13 square.

LESSON 6

Coached Example

Are absolute value bars a kind of grouping symbol? **yes**

Start by performing operations within the **grouping** symbols.

$|5 - 3 + 10| = |2 + 10| = |12|$

$|12| = 12$

$|5 - 3 + 10| = 12$

Lesson Practice

1. B
2. D
3. C
4. D
5. A
6. D
7. B
8. D
9. A
10. A. J and P or L and M

    B. J and $P = 9$ or L and $M = 2$

CHAPTER 1 REVIEW

1. C 7.1e
2. C 7.1b
3. D 7.1a
4. B 7.1c
5. C 7.1d
6. A 7.1b, 7.1c
7. B 7.1e
8. A 7.1c
9. B 7.1b
10. D 7.1d
11. D 7.1b, 7.1c
12. B 7.1a
13. 7.07×10^4, 6.92×10^4, 7.07×10^{-5}, 6.92×10^{-5} 7.1b
14. 0.0325, 3.25%, 3.25×10^{-2} 7.1b, 7.1c
15. −17 7.1d, 7.1e
16. 3 7.1c
17. Perfect squares: 121, 196, 225, 361; Not perfect squares: 46, 266 7.1d
18. Greater than 0.575: 5.75×10^0, 575%; Less than 0.575: 5.75×10^{-2}, 5.75%, $\frac{23}{400}$ 7.1b, 7.1c

Chapter 2

LESSON 7

Coached Example

Write an equation to represent the situation: $-7 - 28.5 = \square$

What is the opposite of the number being subtracted? **−28.5**

Change subtraction to addition and rewrite the original equation: $-7 + (-28.5) = \square$

Estimate the answer: $-10 + (-30) = -40$

Apply the rules for adding two integers: $-7 + (-28.5) = -35.5$

Check the reasonableness of your answer: **−35.5 is close to −40, so the answer is reasonable.**

The low temperature in Fania's town yesterday was **−35.5°F.**

Lesson Practice

1. D
2. A
3. D
4. B
5. C
6. A
7. D
8. B
9. A. 0.8; Possible work: $0.0625 \approx 0.1$, 0.1, $0.125 \approx 0.1$, $0.0905 \approx 0.1$, 0.4; $0.1 + 0.1 + 0.1 + 0.1 + 0.4 = 0.8$

   B. 77.8%; Possible work: $0.0625 + 0.1 + 0.125 + 0.0905 + 0.4 = 0.778$; $0.778 = 77.8\%$

LESSON 8

Coached Example

Write an equation to represent the situation: $-18.5 \div 4 = \square$

Compute as with whole numbers: $18.5 \div 4 = 4.625$

Will the sign of the quotient be positive or negative? **negative**

The change in the temperature of the solution was **−4.625°F** each hour.

Lesson Practice

1. B
2. C
3. A
4. A
5. C
6. D
7. A
8. D
9. A. −26.55 ft; Possible work: $(2.06 + 1.95 + 1.68 + 2.10) + [-4.38 + (-6.54) + (-7.82) + (-9.05) + (-6.55) = 7.79 + (-34.34) = -26.55$

   B. −2.95 ft; Possible work: $-26.55 \div 9 = -2.95$

LESSON 9

Coached Example

Write a proportion. Let x represent the unknown number of miles.

$\frac{5}{3.1} = \frac{8}{x}$

$5 \times x = 3.1 \times 8$

$5x = 24.8$

$\frac{5x}{5} = \frac{24.8}{5}$

$x = 4.96$

If Kathy jogs 8 kilometers, she will have jogged about **4.96** miles.

Lesson Practice

1. D
2. A
3. C
4. D
5. B
6. C
7. A
8. B
9. A. \$34.74; Possible work:

   $\frac{4}{23.16} = \frac{6}{x}$

   $4x = 138.96$

   $\frac{4x}{4} = \frac{138.96}{4}$

   $x = 34.74$

   B. \$81.06; Possible work:

   $\frac{4}{23.16} = 14\backslash x$

   $4x = 324.24$

   $\frac{4x}{4} = \frac{324.24}{4}$

   $x = 81.06$

CHAPTER 2 REVIEW

1. A 7.3
2. D 7.2
3. D 7.2
4. A 7.2
5. A 7.2
6. C 7.3
7. D 7.2
8. B 7.3
9. B 7.2
10. C 7.2
11. \$4.70, \$10.34 7.3
12. 133.56 lb 7.2
13. −\$0.45 7.2
14. \$140.60 7.3
15. Less than 9: $35.6 \times 25\%$, $-6.05 - 4.2$; Greater than 9: $1\frac{1}{4} \div \frac{1}{8}$, $16 \div 1.75$, $3\frac{3}{4} \times 2\frac{5}{8}$ 7.2
16. 679.2 g 7.3

Chapter 3

LESSON 10

Coached Example

The formula for the surface area of a rectangular prism is **$SA = 2lw + 2lh + 2wh$.**

The length of the shoebox is **12 inches.**

The width of the shoebox is **8 inches.**

The height of the shoebox is **6 inches.**

$SA = 2 \times 12 \times 8 + 2 \times 12 \times 6 + 2 \times 8 \times 6$

$SA = 192 + 144 + 96 = 432$

Roger's shoebox has a surface area of **432 square inches.**

Lesson Practice

1. D
2. B
3. C
4. A
5. B
6. C
7. B
8. C
9. A. 928 in.^{2}; Possible work: $SA = (2 \times 20 \times 4) + (2 \times 20 \times 16) + (2 \times 4 \times 16) = 160 + 640 + 128 = 928$

   B. 384 in.^{2}; Possible work: $SA = (2 \times 8 \times 8) + (2 \times 8 \times 8) + (2 \times 8 \times 8) = 128 + 128 + 128 = 384$

LESSON 11

Coached Example

The length of the diameter is **18** meters, so the radius is **9** meters.

$1{,}526.04 \approx 3.14 \times 9^2 \times h$

$1{,}526.04 \approx 3.14 \times 81 \times h$

$1{,}526.04 \approx 254.34 \times h$

$6 \approx h$

The approximate height of the cylinder is 6 meters.

Lesson Practice

1. C
2. B
3. B
4. A
5. D
6. C
7. B
8. C
9. A. 540 in.^{3}; Possible work: $V = 15 \times 2 \times 12 = 540$

   B. 729 in.^{3}; Possible work: $V = 9 \times 9 \times 9 = 729$

LESSON 12

Coached Example

$ST = 12$ cm

$DE = 20$ cm

Write a ratio using the known side lengths: $\frac{12}{20}$

$SU = 18$ cm

$DF = x$ cm

Write a ratio using the known height to the unknown height: $\frac{18}{x}$

Write and solve a proportion to find the missing side length.

$\frac{12}{20} = \frac{18}{x}$

$12x = 360$

$x = 30$

The height of triangle DEF is **30 centimeters.**

Lesson Practice

1. A
2. D
3. C
4. B
5. D
6. B
7. B
8. D
9. A. $\overline{YZ}$

   B. 75°

CHAPTER 3 REVIEW

1. B 7.4a, 7.4b
2. C 7.4a, 7.4b
3. A 7.4a, 7.4b
4. B 7.5
5. B 7.4a, 7.4b
6. A 7.5
7. C 7.5
8. C 7.4a, 7.4b
9. A 7.4a, 7.4b
10. D 7.4a, 7.4b
11. 1,035 in.^{2} of wrapping paper 7.4a, 7.4b
12. True: $\angle B \cong \angle K$, $\angle A \cong \angle L$, $\frac{CD}{LM} = \frac{AB}{JK}$;
    False: $\frac{AD}{JM} = \frac{BC}{JK}$, $\frac{DC}{ML} = \frac{AB}{KL}$ 7.5
13. 673.14 m^3 7.4a, 7.4b
14. 2,688 $\times \frac{1}{64}$ 7.4a, 7.4b
15. SA < 300 in.^{2}: 12 by 6 by 3, 15 by 4 by 2;
    SA > 300 in.^{2}: 9 by 9 by 9, 10 by 8 by 6, 8 by 8 by 8 7.4a, 7.4b
16. 17,662.5 ft^3 of water 7.4a, 7.4b

Chapter 4

Lesson 13

Coached Example

The figure is a parallelogram, so opposite angles Q and S must be congruent.

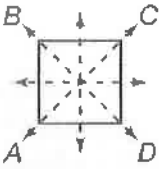
136° + 136° = 272°

360° − 272° = 88°

88° ÷ 2 = 44°

The measure of angle Q is 44 degrees. The measure of angle S is also 44 degrees.

Lesson Practice

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

   B. Yes, Alicia is correct. Possible explanation: $\overleftrightarrow{BD}$ and $\overleftrightarrow{AC}$ are lines of symmetry for the square which coincide with diagonals $\overline{BD}$ and $\overline{AC}$.

LESSON 14

Coached Example

The vertices of triangle XYZ are: X(−6, 2), Y(−6, 6), and Z(−1, 2).

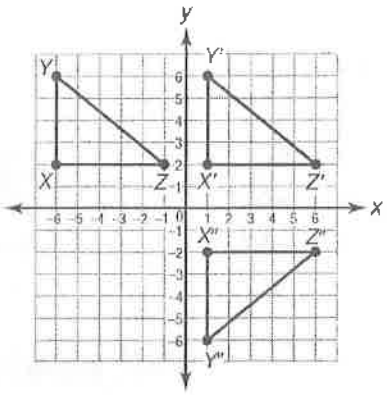
Is a translation a slide or a flip? **slide**

A horizontal translation of 7 units to the right moves each point (x, y) to $(x + 7, y)$.

The vertices of the image after the translation are X′(1, 2), Y′(1, 6), and Z′(6, 2).

Is a reflection a slide or a flip? **flip**

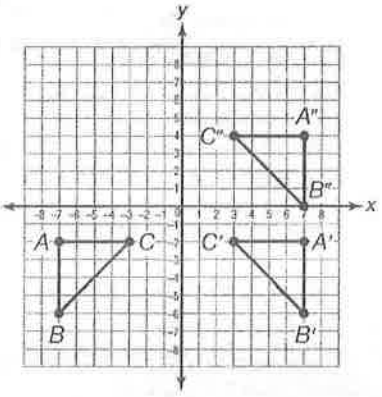
When points (x, y) are reflected over the x-axis, the x-coordinates stay the same, while the sign of the y-coordinates change.



The vertices of the image after the translation and the reflection are X″(1, −2), Y″(1, −6), and Z″(6, −2). Its graph is shown above.

Lesson Practice

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



   B. Yes, the result would be the same. Possible explanation: A translation of △ABC 6 units up would result in a figure with the vertices A′(−7, 4), B′(−7, 0), and C′(−3, 4). A reflection over the y-axis means changing the signs of the x-coordinates, but not the y-coordinates. So, the final image would have vertices A″(7, 4), B″(7, 0), and C″(3, 4). Those are the same coordinates as △A″B″C″ in Part A.

CHAPTER 4 REVIEW

1. D 7.7
2. A 7.7
3. C 7.6a, 7.6b
4. D 7.7
5. A 7.6a
6. B 7.6a
7. D 7.6a
8. C 7.7
9. A 7.6a
10. **Parallelogram:** A, C; **Not a Parallelogram:** B, D 7.6a
11. reflection over the *x*-axis; translation 4 units down 7.7
12. (1, 5) 7.7
13. $\overline{GL}$; $\overline{HL}$; $\overline{JL}$; $\overline{KL}$ 7.6a
14. 97 7.6b
15. $P''(-1, 1)$, $G''(-6, 1)$, $H''(-6, -3)$ 7.7

Chapter 5

LESSON 15

Coached Example

How many CDs are there altogether? **10**

The probability of picking a country CD for the first CD is $\frac{7}{10}$.

The probability of picking a country CD for the second CD is $\frac{7}{10}$.

Multiply the probabilities.

$\frac{7}{10} \times \frac{7}{10} = \frac{49}{100}$

The probability of the first two CDs that Christina picks being country CDs is $\frac{49}{100}$.

Lesson Practice

1. B
2. B
3. D
4. A
5. D
6. D
7. C
8. C
9. B
10. A. Possible list of favorable outcomes: 3 + 6, 4 + 5, 5 + 4, 6 + 3, 4 + 6, 5 + 5, 6 + 4, 5 + 6, 6 + 5, 6 + 6

    Total possible outcomes: $6 \times 6 = 36$

    Probability: $\frac{10}{36} = \frac{5}{18}$

    B. 20 times; Possible work: $\frac{5}{18} \times 72 = \frac{360}{18} = 20$

LESSON 16

Coached Example

An even number was tossed 32 times out of 50 trials.

$P(\text{even number}) = \frac{32}{50} = \frac{16}{25}$

The experimental probability of tossing an even number is **64%**.

$\frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}} = \frac{3}{6} = \frac{1}{2}$

The theoretical probability of tossing an even number is **50%**.

The experimental probability of tossing an even number is **64%**. The theoretical probability is **50%**. These probabilities are close in value. If Sarah tossed the number cube another 500 times, the two probabilities will get much **closer** in value.

Lesson Practice

1. B
2. C
3. D
4. A
5. D
6. D
7. A. Possible list of favorable outcomes: 3 + 6, 4 + 5, 5 + 4, 6 + 3, 4 + 6, 5 + 5, 6 + 4, 5 + 6, 6 + 5, 6 + 6

    Total possible outcomes: $6 \times 6 = 36$

    Probability: $\frac{10}{36} = \frac{5}{18}$

    B. 20 times; Possible work: $\frac{5}{18} \times 72 = \frac{360}{18} = 20$

LESSON 17

Coached Example

The least age is 31. The greatest age is **75**.

The intervals will be 31–40, **41–50, 51–60, 61–70,** and **71–80**.

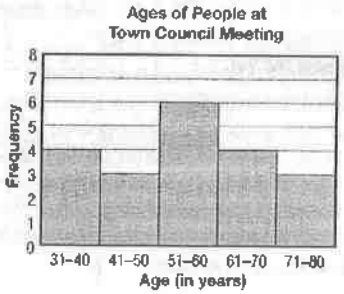
Tally the data in the table and record the frequencies.

Ages of People at Town Council Meeting

Age (in years)	Tallies	Frequency
31–40	||||	**4**
41–50	|||	**3**
51–60	𝍸 |	**6**
61–70	||||	**4**
71–80	|||	**3**

The least frequency in the table is *3*. The greatest frequency is *6*.

A good scale would be from 0 to 8 with intervals of **1**.



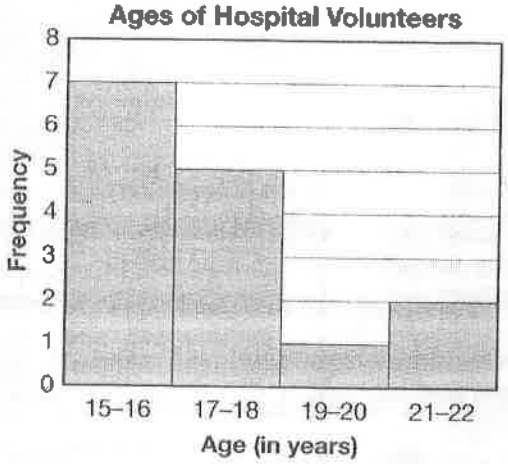
Lesson Practice

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

7. A. **Ages of Hospital Volunteers**

Age (in years)	Tallies	Frequency
15–16	𝍸 ||	7
17–18	𝍸	5
19–20	|	1
21–22	||	2

B. **Ages of Hospital Volunteers**



LESSON 18

Coached Example

The first graph is a **histogram**, which shows the frequency of data within equal **intervals.**

Although the graph shows the data, it is not easy to determine the number of students that scored **79** or **89** on the test.

The second graph is a **stem-and-leaf plot**, which shows the **value** of each data point.

The question can easily be answered by counting the number of **9s** for the stems **7** and **8.**

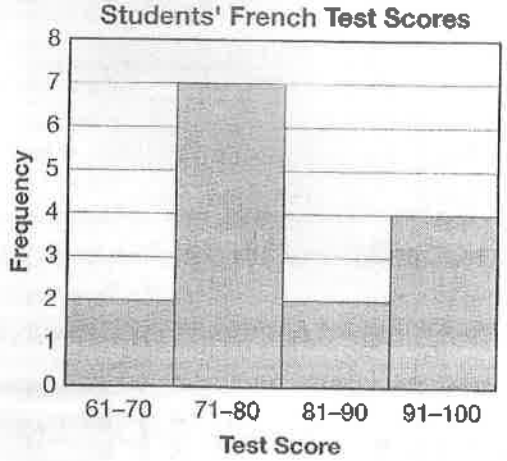
The **stem-and-leaf plot** best displays the data for answering the question.

Lesson Practice

1. D
2. B
3. A
4. C
5. A. Possible question: What percent of employees earn $20 or more per hour?
   B. Possible question: Exactly how many students earn $14 or less per hour?

CHAPTER 5 REVIEW

1. A 7.9a
2. C 7.9b
3. B 7.9b
4. B 7.8a
5. D 7.8b
6. B 7.9c
7. 40(%) 7.8a
8. **Students' French Test Scores**



7.9a

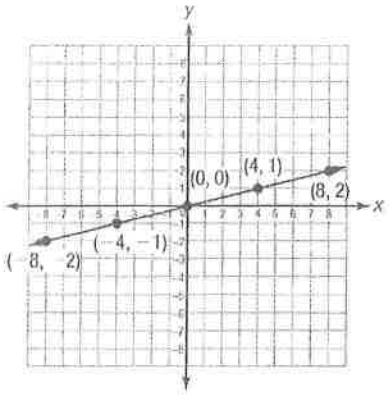
9. $\frac{5}{36}$; 10 7.8a
10. **Less Than the Theoretical Probability:** B; **Equal to the Theoretical Probability:** A, C; **Greater than the Theoretical Probability:** D 7.8b
11. 23 7.9b

Chapter 6

LESSON 19

Coached Example

x	y
$-8 \xrightarrow{\times\frac{1}{4}}$	−2
$-4 \xrightarrow{\times\frac{1}{4}}$	−1
$0 \xrightarrow{\times\frac{1}{4}}$	0
$4 \xrightarrow{\times\frac{1}{4}}$	1
$8 \xrightarrow{\times\frac{1}{4}}$	2



Does the graph form a straight line? **yes**

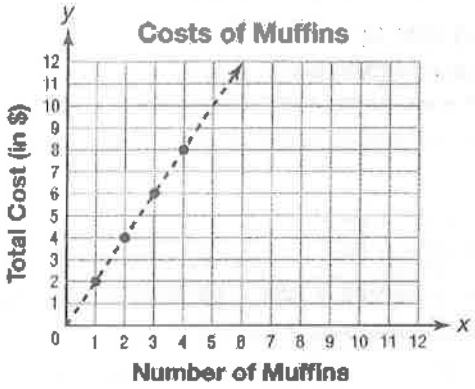
Does it pass through the origin? **yes**

Based on this, is the relationship shown in the table proportional? **yes**

The graph I drew shows a straight line that passes through the origin, so the relationship shown is proportional.

Lesson Practice

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



B. $10; Possible explanation: The graph passes through (5, 10), so 5 muffins cost $10.

LESSON 20

Coached Practice

The points (1, 6) and (2, 12) are on the line.

Count units to find the slope. Keep in mind that the *x*-axis is increasing by 1s, but the *y*-axis is increasing by 3s.

Between those points, the line moves 6 unit(s) up and 1 unit(s) to the right.

So, the slope is $\frac{6}{1}$ or 6.

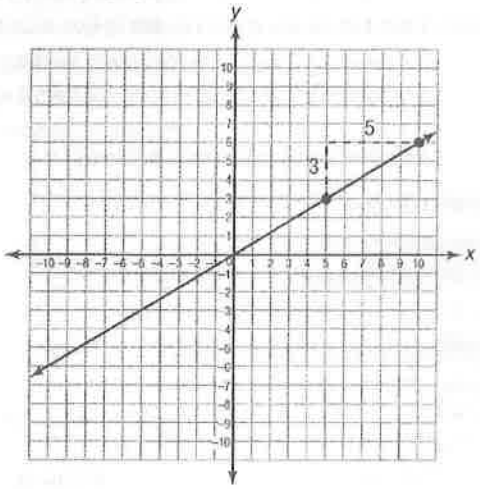
In this situation, the input value is represented by the variable *s*, not *x*.

The output value is represented by the variable *P*, not *y*.

So, the equation of the line is $P = 6s$.

Lesson Practice

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



B. $y = \frac{3}{5}x$

LESSON 21

Guided Practice

(4, 1): 4 + (−3) = 1

(5, 2): 5 + (−3) = 2

(6, 3): 6 + (−3) = 3

(7, 4): 7 + (−3) = 4

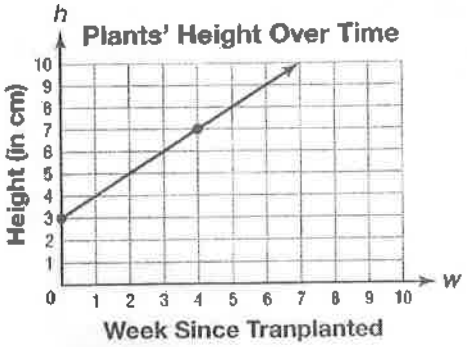
So, the equation is $M = J - 3$.

The value of *b* is −3. It shows that Maria is 3 years younger than Jaime.

Lesson Practice

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

5. B
6. A
7. A.



Possible explanation: When it was transplanted, the plant was 3 centimeters tall. So, I plotted the *y*-intercept at (0, 3). By Week 4, the plant was 7 centimeters tall. So, I plotted a point at (4, 7). Then I drew a line to connect them.

B. $h = w + 3$; Possible explanation: Additive relationships can be written in the form $y = x + b$. Since $b = 3$, the input variable is w and the output variable is h, I wrote $h = w + 3$.

LESSON 22

Lesson Practice

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

Table A
Additive Relationship

x	*y*
2	20
3	21
4	22
5	23

Table M
Multiplicative Relationship

x	*y*
2	20
3	30
4	40
5	50

B. Possible explanation: Table A shows an additive relationship because 18 can be added to each *x*-value to get its corresponding *y*-value. Table M shows a multiplicative relationship because each *x*-value can be multiplied by 10 to get its corresponding *y*-value.

LESSON 23

Coached Example

$\frac{16}{p} - 3q = \frac{16}{8} - 3 \times 5$

$\frac{16}{8} - 3 \times 5 = 2 - 3 \times 5$

$= 2 - 15$

Now, add and subtract in order from left to right.

$2 - 15 = -13$

The value of the expression is -13.

Lesson Practice

1. B
2. B
3. C
4. A
5. D
6. D
7. D
8. C
9. A
10. A. $x^2 + 5x - 4y$

    Possible work: $x^2 - 3y + 5x - y = x^2 + 5x - 3y - y = x^2 + 5x - 4y$

    B. 74

    Possible work: $x^2 + 5x - 4y = 6^2 + 5(6) - 4-2) = 36 + 30 + 8 = 74$

LESSON 24

Coached Example

The word **"plus"** indicates addition.

The words "per hour" suggest **multiplication**.

The word **"was"** indicates where to place the equal sign.

$5 + 2.5h = 15$

The equation $5 + 2.5h = 15$ represents the situation.

Lesson Practice

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

9. A. Answers will vary. Possible answer: The unknown value is the number of smoothies Vincent has already purchased using his card. Let s represent that number of smoothies.

   B. $40 - 4s = 28$

LESSON 25

Coached Example

$$223 + 20p = 500$$

$$223 - 223 + 20p = 500 - 223$$

$$20p = 277$$

$$\frac{20p}{20} = \frac{277}{20}$$

$$p = 13.85$$

What value did you get for p? **13.85**

No, because the value is a decimal (or mixed number).

The value of p is between which whole numbers? **13 and 14**

If I choose **14** as the whole-number answer, the cost will be greater than $500.

If I choose **13**, the cost will be under $500.

If she spends no more than $500, the maximum number of people that Janeel can have at the party is **13**.

Lesson Practice

1. A
2. D
3. B
4. C
5. D
6. C
7. C
8. B
9. A. Possible answer: $190 + 5c = 350$, where c is the number of cars washed.

   B. They need to wash 32 cars.

   Possible work:

$$190 + 5c = 350$$

$$190 - 190 + 5c = 350 - 190$$

$$5c = 160$$

$$c = 32$$

LESSON 26

Coached Example

$5d - 10 < 50$

$5d - 10 + 10 < 50 + 10$

$5d < 60$

Divide both sides by **5** to isolate the variable, d.

$5d \div 5 < 60 \div 5$

$d < 12$

Possible graph:

Possible answer:

Some restrictions on the solution are **the amount paid by each friend must be greater than $0, since they paid for a meal as well as tax and tip.**

The solution is $d < 12$. Its possible solutions are shown and described above.

Lesson Practice

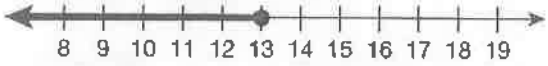
1. D
2. C
3. D
4. A
5. A
6. B
7. C
8. B
9. A. $5d + 35 \leq 100$;

   Possible work: $5d + 35 - 35 \leq 100 - 35$

$$5d \leq 65$$

$$d \leq 13$$

   B. Possible graph:



   Possible restrictions: The amount paid for each t-shirt must be greater than $0 and cannot be too close to $0, since a t-shirt will likely cost several dollars.

CHAPTER 6 REVIEW

1. C 7.10a
2. D 7.11
3. C 7.12
4. A 7.10b
5. D 7.11
6. B 7.13
7. C 7.13
8. C 7.12
9. D 7.12
10. D 7.10d
11. **Additive Relationship:** B, C; **Multiplicative Relationship:** A, D 7.10e
12. 6; $y = 6x$ 7.10a, 7.10b
13. < 9 7.13
14. $2 + 12h = 38$; 3 7.12
15. $x = 5$: A, B, D; $x = 6$: B, D: A; $x = 7$: C 7.13
16. $(0, -2)$; $y = x - 2$ 7.12a