

**Trenton Catholic Academy  
Grades 7 & 8 Supply List  
2017-2018**

**All students in the Middle School are required to purchase the following supplies for the 2017-2018 school year.**

- pens (dark blue or black ink only) no pink, orange, green, etc.
- 24 pencils
- (1) Hi-Liter
- 1 pack of loose leaf paper
- (1)- 5 subject spiral notebook for math
- (1)- single subject binder for social studies
- (1)- 3 subject notebook for science
- (1)- single subject black/white marble composition notebook
- (5)- folders: Religion, Spanish, math, art, and music
- glue or glue stick
- (6) book covers (paper or appropriate sized Book Socks L or XL)
- **book bags must be able to fit into a locker**
- 3-ring binder with dividers for language arts
- ear buds for computer class
- (1) package of 100 index cards
- notebook for assignments and projects
- 3 boxes of tissues
- 2 rolls of paper towels
- Lysol Wipes



**Art Supplies**

- art box (medium size)
- construction paper
- glue or glue stick
- sketch pad
- colored pencils
- fine-tip markers
- water color paint pallet



**Please be mindful that all supplies should be replenished throughout the school year. It is important that our students have the necessary supplies at all times to ensure their success in the classroom. Have a great summer and we look forward to seeing you in September!**

**7<sup>th</sup> Grade Summer Reading**  
***On My Honor* by Marion Dane Bauer**

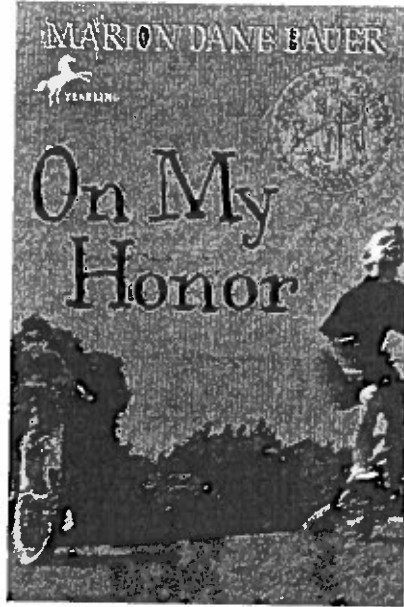
One of our goals at Trenton Catholic Academy is to instill in students a lifelong love of reading. Summer reading will assist us in achieving our goal as we look to foster in students a desire to read for pleasure, as well as, the acquisition of knowledge. While we would like to maintain an excitement about books throughout the summer, we also want to encourage students to enjoy quality, diverse literature while developing their independent reading skills. Incoming 7<sup>th</sup> grade students will be required to read two books over the summer. One mandatory book will be read by all incoming 7<sup>th</sup> graders; the other will be self selected.

**Mandatory Novel – *On My Honor***

**Directions:** Please obtain a copy of *On My Honor* by Marion Dane Bauer from any local bookstore or library and read it over the summer break. Please complete the journal questions below as you read *On My Honor*. After you have finished reading *On My Honor*, please complete two of the projects listed below. Students should be prepared to participate in a group discussion activity and complete a writing assignment upon their return to school in September.

**Journal Questions**

*You may create a PowerPoint presentation with your responses to the journal questions.*



**Chapter 1:** Tony thought they should ride bikes out to the bluffs. Joel suggested they do something else. What were 2 of Joel's suggestions? Why was Joel's father hesitant in giving his permission for the boys to ride out to Starved Rock? If Joel didn't really want to go out to the bluffs, why did he say he did?

**Chapter 2:** Why did the boys trade bikes? Describe the Vermillion River with at least three facts.

**Chapter 3:** Joel thought of leaving Tony's bike right out in the open. What changed his mind? The boys get in an argument about their dads. What does Joel say to Tony that really made him upset? Tony says he is going to Starved Rock to climb the bluffs by himself. Why does this scare Joel?

**Chapter 4:** Describe how Tony looked as he attempted to swim to the sandbar. Joel saw that Tony was having trouble swimming. Why didn't Joel just call off the dare and go back? Standing up to your friends is hard to do sometimes. What do you think you would have done if you were Joel?

**Chapters 5 & 6:** What did Joel do when he realized what happened? Why did Joel stop looking for Tony? Why did Joel suggest that he go to the police instead of the boy? What do you think his real reason was? What would you do in this situation?

**Chapter 7:** Joel thought it would be best if he ran away. What were his reasons for doing this? Why did he change his mind? What explanation had Joel decided to give to everyone at home about Tony?

**Chapter 8:** When his dad continues to question him about Tony, what "story" does Joel give him?

**Chapters 9 & 10:** Joel had to invent another portion of his story when the Zabrinky's asked where he last saw Tony. What did Joel say? Why did Tony's mother react the way she did?

**Chapters 11 & 12:** How do you think Joel felt after telling the story to the police officer? What evidence is there in the story to support your answer? Why was it going to be a hard thing for both Joel and his father to live with? Explain your answer.

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## ***On My Honor* by Marion Dane Bauer** **Summer Reading Projects**



You must pick **two** of the following projects to complete for the novel *On My Honor*.

- Make a cause and effect diagram that charts the choices and decisions that characters made along the path to and from the river. After that step is complete, add sticky notes wherever an alternative choice could have been made and what that might have been.
- Write a letter from Joel to Tony's parents about the events in the book.
- Research the topic of water safety and create an illustrated pamphlet about what you learned. Be sure to put the information into your own words so that kids can understand your pamphlet.
- Create an abstract piece of art inspired by one of the following words: guilt, regret, honor, responsibility, peer pressure or blame. Explain your piece of art in a short paragraph that you attach to the back.
- Create chapter titles for *On My Honor*. Make them interesting, but do not give away the story.
- Write a Chapter 13 for *On My Honor*. You can change the ending of the story to be whatever you wish would happen next.

Self Selected Novel

Please obtain a copy of one of the novels from the list below from any local bookstore or library and read it over the summer break. When you have finished the novel, choose one project to complete. Please see the list of projects below. This will be collected on the first day of school.

Becoming Naomi Leon – Pam Munoz Ryan (Fiction)

Naomi Soledad Leon Outlaw has had a lot to contend with in her young life, her name for one. Then there are her clothes, her difficulty speaking up, and her status at school as “nobody special.” But according to Gram’s self-prophecies, most problems can be overcome with positive thinking. Luckily, Naomi also has her carving to strengthen her spirit. And life with Gram and her little brother, Owen, is happy and peaceful. That is, until their mother reappears after seven years of being gone, stirring up all sorts of questions and challenging Naomi to discover who she really is.

Soccerland – Beth Choat (Fiction)

Flora is such a good soccer player that she has been invited to the International Sports Academy to compete for a chance to play for the U.S. Girls’ Soccer Team. It’s her first time away from home, but she works hard to make new friends as well as trying to become the best soccer player that she can be.

The Mozart Season – Virginia Euwer Woolf

Allegra enters a competition for young musicians but ends up spending the summer learning important lessons about her family and herself.

Amelia Lost: The Life and Disappearance of Amelia Earhart – Candace Fleming (Non-Fiction)

This fascinating biography alternates between the story of Amelia Earhart’s life and the days surrounding her disappearance. Through photos, sidebars, maps, and letters, the author gives readers a compelling glimpse at the life of a legend.

The Second Mrs. Gioconda – E.L. Konigsburg (Fiction)

The Mona Lisa has always been surrounded by mystery. Find out who the woman in the painting really was and why Leonardo da Vinci painted her.

The Great and Only Barnum: The Tremendous, Stupendous Life of Showman P.T. Barnum – Candace Fleming (Non-Fiction)

This biography takes a look at the life of the entrepreneur and showman P.T. Barnum, the man behind The Greatest Show on Earth. From jumbo elephants to three-ring circuses, the story follows Barnum from his childhood to his amazing success to financial disaster and back again.

The Chimpanzees I Love: Saving Their World and Ours – Jane Goodall (Non-Fiction)

Imagine a curiosity and passion that compels you to live in a community of chimpanzees. Dr. Goodall tells of her discoveries about chimpanzees, her love for them, and her campaign for the protection of these amazing animals.

Criss Cross – Lynne Rae Perkins (Fiction)

She wished something would happen, something good to her. Checking her wish for loopholes, she found one. Hoping it wasn’t too late, she thought the word: soon.

Looking For Marco Polo – Alan Armstrong (Fiction)

Eleven-year-old Mark’s anthropologist father has disappeared in the Gobi desert while tracing Marco Polo’s ancient route from Venice to China. His mother decides they must go to Venice to petition the agency that sent Mark’s father to send out a search party. Anxious about his father and upset about spending Christmas away from home, Mark gets a bad asthma attack in the middle of the night. That’s when Doc Hornaday, an old friend of Mark’s father, makes a house call. To distract Mark from his wheezing and to pass the long Venetian night, the Doc starts to spin for Mark the tale of Marco Polo. Doc describes Marco’s travels and the boy finds himself falling under the spell of the story that has transfixed the world for centuries. Marco’s journey bolsters Mark’s courage and appetite for risk and adventure, and for exposure to life in all its immense and fascinating variety.

The following nonfiction works are also available for the self selected summer reading assignment:

- “Mapping the West: The Journey of Lewis and Clark”
- “Night Vision”
- “Nighttime in Texas”

To access these works, please visit [Readworks.org](http://www.readworks.org) and sign up for a free account. Web link:  
<http://www.readworks.org/welcome-readworks>

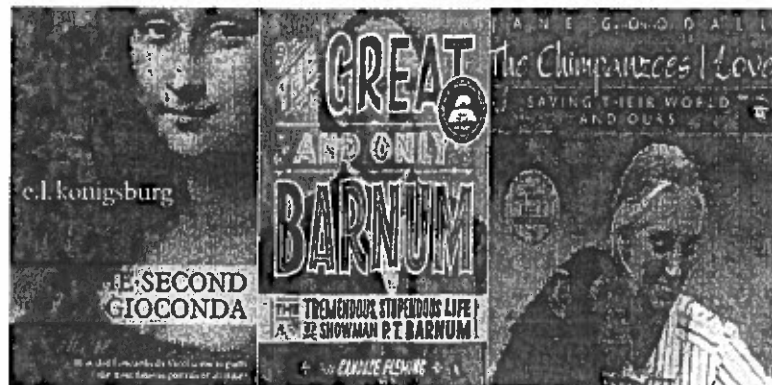
**Self Selected Novel: Project Choices**

When you have finished the novel, choose one project to complete. This will be collected on the first day of school.



**Project Choices:**

- Summarize the book in poem form with rhyme (minimum 8 stanzas, 4 lines)
- Write a letter to the author. Explain what you liked or did not like about the book. Make sure you include any questions you had for the author (4 paragraphs, proper letter format)
- Pretend you are interviewing a character from the book. Write your interview in question and answer format (minimum 25 questions)
- Design a timeline for events in the book. Explain each event in 2-3 sentences.
- Design a new cover for the book. Include a new summary for the back of the novel (3 paragraphs)
- Write your own test. Include matching, multiple choice, true/false, short answer, and an essay. Remember to include an answer key!



6<sup>th</sup> graders going into 7<sup>th</sup> grade

## **6<sup>TH</sup> GRADE SUMMER MATH PROJECT**

### **Part ONE:**

You will be making a Math game board! Make your own template of a game board, use one from online or repurpose an old game board. You must include:

Instructions:

1. You must include ONLY math questions.
2. The topics to use are
  - a. Divisibility Rules
  - b. Multiplication Facts
  - c. Division Facts
3. You must include questions that test ALL of the Divisibility Rules
4. You must include AT LEAST 10 questions with Multiplication Facts
5. You must include AT LEAST 15 questions with Division Facts

### **Part TWO:**

This section will be a Math Communications. Sometimes you understand how to do a math problem but you are also going to be held accountable of being able to explain your reasoning's. You will have to work out AND explain the steps you took to solve the problem.

Instructions:

1. You must show ALL of your work for how you solved the problem.
2. Your explanation needs to be in PARAGRAPH FORM and in COMPLETE SENTENCES.
3. You may type this section up or hand write it.

**QUESTION: John started hiking at 8:00 A.M. when the temperature was 64°. The temperature rose 17° by noon. The temperature then fell 25°F by the time John finished hiking. What was the temperature when John finished hiking?**

**If you have ANY questions please email us at [Jmetzler@trentoncatholic.org](mailto:Jmetzler@trentoncatholic.org) or [Ssemple@trentoncatholic.org](mailto:Ssemple@trentoncatholic.org). Please have fun with this and BE CREATIVE!!!**

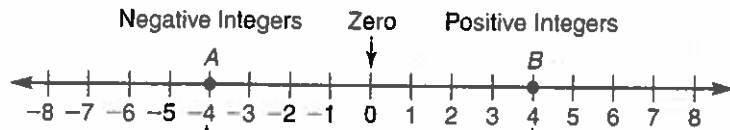


# I-1 Integers and Absolute Value

Name \_\_\_\_\_

Date \_\_\_\_\_

The set of integers contains the set of whole numbers and their opposites.



**Remember:** The opposite of 0 is 0.

Point A is at  $-4$ , or negative 4.

$-4$  and  $4$  are opposites.

Point B is at  $4$ , or positive 4.

The *absolute value* of a number is its distance from zero on a number line. The absolute value of  $-4$  is equal to the absolute value of  $4$ .  $|-4| = |4| = 4$ .

**Write each as an integer.**

1. 7 meters forward +7 or 7

2. at sea level \_\_\_\_\_

3.  $8^\circ\text{C}$  below  $0^\circ\text{C}$  \_\_\_\_\_

4. loss of 6 points \_\_\_\_\_

5. 90 meters below sea level \_\_\_\_\_

6. \$4 gain \_\_\_\_\_

**Write the opposite of each.** (*Hint:* First evaluate the expression. Then find its opposite.)

7. 5

8.  $-9$

9.  $-32$

10.  $-|18|$

11.  $-|-23|$

12.  $-(-15)$

-5

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Write the integer for each exercise.**

13.  $|7|$

14.  $|0|$

15.  $|-8|$

16.  $|-5|$

17.  $(-3)$

18.  $-(-2)$

7

\_\_\_\_\_

\_\_\_\_\_

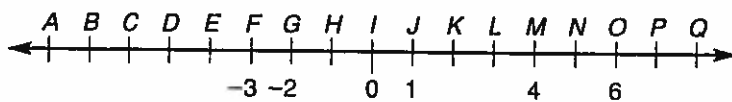
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Use the number line for exercises 19–31.**

**Name the letter that matches each integer on the number line.**



19.  $-1$

20.  $-6$

21.  $-5$

22.  $-4$

23. 2

24. 3

H

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Name the integer that matches each letter on the number line.**

25. P

26. B

27. N

28. L

29. Q

30. A

7

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

31. What integer would be 2 units to the right of E? \_\_\_\_\_

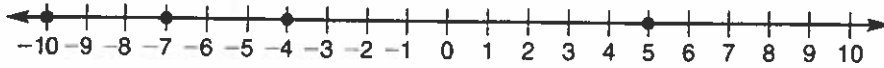


# 1-2 Compare and Order Integers

Name \_\_\_\_\_

Date \_\_\_\_\_

Integers increase in value as you move from left to right on a horizontal number line.



-4 is to the right of -10, so -4 is greater than -10.

Write  $-4 > -10$ .

5 is to the right of -7, so 5 is greater than -7.

Write  $5 > -7$ .

**On a horizontal number line:**

- To order from least to greatest, start with the integer farthest to the left.  
-10, -7, -4, 5
- To order from greatest to least, start with the integer farthest to the right.  
5, -4, -7, -10

**Write the integer for each exercise.**

1.  $-3$  -3    2.  $(4)$  \_\_\_\_\_    3.  $|18|$  \_\_\_\_\_    4.  $-|5|$  \_\_\_\_\_    5.  $|-7|$  \_\_\_\_\_    6.  $-|-1|$  \_\_\_\_\_

**Write the integer that comes just before and just after each number.**

7. -1

8. -19

9. -8

10. -50

-2 and 0

11. 0

12. 79

13.  $-(-10)$

14.  $|-6|$

**Compare. Write  $<$ ,  $=$ , or  $>$ .**

15.  $4 < 7$

16.  $3$  \_\_\_\_\_  $1$

17.  $2$  \_\_\_\_\_  $0$

18.  $0$  \_\_\_\_\_  $-4$

19.  $-1$  \_\_\_\_\_  $1$

20.  $3$  \_\_\_\_\_  $-6$

21.  $-6$  \_\_\_\_\_  $-3$

22.  $-3$  \_\_\_\_\_  $-8$

23.  $-14$  \_\_\_\_\_  $-12$

24.  $-42$  \_\_\_\_\_  $-50$

25.  $-25$  \_\_\_\_\_  $-26$

26.  $-58$  \_\_\_\_\_  $-59$

27.  $-17$  \_\_\_\_\_  $-(-13)$

28.  $-18$  \_\_\_\_\_  $-(-18)$

29.  $-(-36)$  \_\_\_\_\_  $36$

30.  $-(-100)$  \_\_\_\_\_  $1000$

31.  $5$  \_\_\_\_\_  $|-5|$

32.  $2$  \_\_\_\_\_  $-|2|$

33.  $-|-7|$  \_\_\_\_\_  $-7$

34.  $-14$  \_\_\_\_\_  $-|-5|$

35.  $-(-4)$  \_\_\_\_\_  $|-4|$

36.  $|-8|$  \_\_\_\_\_  $-(-8)$

37.  $-(-51)$  \_\_\_\_\_  $-|22|$

38.  $-(-22)$  \_\_\_\_\_  $-|-51|$

**True or False. Explain.**

39. A positive integer is always greater than 0.

40. A negative integer is not less than 0.

**True:** Positive integers are always to the right of 0 on a number line and are  $> 0$ .

41. A negative integer is always less than a positive integer.

42. A positive integer is never greater than a negative integer.

# I-3 Add Integers

Name \_\_\_\_\_ Date \_\_\_\_\_

To add integers with *like signs*, add the absolute values of the addends and use the sign of the addends for the sum.

Add:  $-2 + (-6)$  **Think**  
 $| -2 | + | -6 | \rightarrow 2 + 6 = 8$   
 $-2 + (-6) = -8$  The addends are negative, so the sum is negative.

Add:  $2 + 6$  **Think**  
 $| 2 | + | 6 | \rightarrow 2 + 6 = 8$   
 $2 + 6 = 8$  The addends are positive, so the sum is positive.

To add integers with *unlike signs*, subtract the lesser absolute value from the greater absolute value. Use the sign of the addend with the greater absolute value for the sum.

Add:  $-2 + 6$  **Think**  
 $| 6 | - | -2 | \rightarrow 6 - 2 = 4$   
 $-2 + 6 = 4$   $| 6 | > | -2 |$ , so the sum is positive.

Add:  $2 + (-6)$  **Think**  
 $| -6 | - | 2 | \rightarrow 6 - 2 = 4$   
 $2 + (-6) = -4$   $| -6 | > | 2 |$ , so the sum is negative.

## Add.

1.  $-4 + (-2) = -6$

2.  $7 + (-16) =$  \_\_\_\_\_

3.  $-11 + 12 =$  \_\_\_\_\_

4.  $0 + (-3) =$  \_\_\_\_\_

5.  $7 + (-15) =$  \_\_\_\_\_

6.  $-7 + 5 =$  \_\_\_\_\_

7.  $-4 + (-6) =$  \_\_\_\_\_

8.  $9 + (-6) =$  \_\_\_\_\_

9.  $-17 + (-8) =$  \_\_\_\_\_

10.  $-11 + (-16) =$  \_\_\_\_\_

11.  $18 + (-3) =$  \_\_\_\_\_

12.  $-14 + (-12) =$  \_\_\_\_\_

13.  $16 + 17 =$  \_\_\_\_\_

14.  $-13 + (-13) =$  \_\_\_\_\_

15.  $-11 + 19 =$  \_\_\_\_\_

16.  $-45 + 45 =$  \_\_\_\_\_

17.  $-45 + 12 =$  \_\_\_\_\_

18.  $23 + (-18) =$  \_\_\_\_\_

19.  $-14 + (-34) =$  \_\_\_\_\_

20.  $43 + 9 =$  \_\_\_\_\_

21.  $-39 + (-4) =$  \_\_\_\_\_

22.  $19 + (-23) =$  \_\_\_\_\_

23.  $47 + 29 =$  \_\_\_\_\_

24.  $35 + 56 =$  \_\_\_\_\_

25.  $-67 + 54 =$  \_\_\_\_\_

26.  $-14 + (-32) =$  \_\_\_\_\_

27.  $28 + (-31) =$  \_\_\_\_\_

28.  $-50 + 35 =$  \_\_\_\_\_

29.  $24 + (-19) =$  \_\_\_\_\_

30.  $-81 + (-11) =$  \_\_\_\_\_

31.  $-213 + (-327) =$  \_\_\_\_\_

32.  $121 + (-232) =$  \_\_\_\_\_

33.  $-453 + 112 =$  \_\_\_\_\_

# 1-4 Subtract Integers

Name \_\_\_\_\_ Date \_\_\_\_\_

To subtract integers, add the opposite (additive inverse) of the subtrahend.

$9 - 7$	$9 - (-7)$	$-9 - 7$	$-9 - (-7)$
$9 + (-7)$	$9 + 7$	$-9 + (-7)$	$-9 + 7$
$2$	$16$	$-16$	$-2$

**Remember:** The subtrahend is the number you subtract.

$$\begin{array}{r} 9 \\ -7 \leftarrow \text{subtrahend} \\ \hline ? \end{array} \quad 9 - 7 = ?$$

**Find the difference.** (*Hint:* Rewrite each expression using the opposite, or additive inverse. Then compute.)

1.  $25 - 6$   
 $\quad \quad 25 + (-6)$   
 $\quad \quad \underline{19}$

2.  $9 - 9$

3.  $27 - 27$

4.  $0 - 9$

5.  $17 - 28$

6.  $38 - 56$

7.  $40 - (-40)$

8.  $7 - (-7)$

9.  $34 - (-17)$

10.  $30 - (-70)$

11.  $-18 - 12$

12.  $-32 - 64$

13.  $-16 - 18$

14.  $-32 - 75$

15.  $-45 - 39$

16.  $-98 - 134$

17.  $-4 - (-4)$

18.  $-3 - (-8)$

19.  $-5 - (-8)$

20.  $-12 - (-25)$

21.  $-7 - (-6)$

22.  $-11 - (-14)$

23.  $-45 - (-12)$

24.  $-34 - (-23)$

25.  $-112 - (-56)$

26.  $12 - |8|$

27.  $23 - |11|$

28.  $|15| - 7$

29.  $|108| - 67$

30.  $-|4| - 9$

# 1-5 Multiply Integers

Name \_\_\_\_\_ Date \_\_\_\_\_

The product of two integers with *like signs* is positive.

positive • positive = positive

$$2 \cdot 3 = 6$$

negative • negative = positive

$$-2 \cdot (-3) = 6$$

The product of two integers with *unlike signs* is negative.

positive • negative = negative

$$2 \cdot (-3) = -6$$

negative • positive = negative

$$-2 \cdot 3 = -6$$

When the number of negative factors is *even*, the product is positive.

$$-2 \cdot (-2) \cdot (-2) \cdot (-2) = 16$$

When the number of negative factors is *odd*, the product is negative.

$$-2 \cdot (-2) \cdot (-2) = -8$$

**Remember:** Multiplication can be shown different ways:

$$3 \times 4 = 3 \cdot 4 = 3(4) = (3)(4).$$

**Find the product.**

- |                              |                            |                            |
|------------------------------|----------------------------|----------------------------|
| 1. $5 \cdot 8$ <u>40</u>     | 2. $9 \cdot 6$ _____       | 3. $3(11)$ _____           |
| 4. $6(12)$ _____             | 5. $0 \cdot 14$ _____      | 6. $-16(0)$ _____          |
| 7. $-3 \cdot (-8)$ _____     | 8. $-2(-34)$ _____         | 9. $-8 \cdot (-12)$ _____  |
| 10. $(-9)(-18)$ _____        | 11. $7 \cdot (-9)$ _____   | 12. $5 \cdot (-10)$ _____  |
| 13. $34(-2)$ _____           | 14. $-9 \cdot 9$ _____     | 15. $8(-14)$ _____         |
| 16. $(-49)(38)$ _____        | 17. $23 \cdot  -10 $ _____ | 18. $-36 \cdot  -1 $ _____ |
| 19. $ -2  \cdot  -29 $ _____ | 20. $ 4  \cdot (54)$ _____ | 21. $ -8 \cdot 13 $ _____  |

**Tell whether the product will be positive or negative.**

**Then find the product.** (*Hint:* Count the negative factors.)

- |   |   |
|---|---|
| 22. $3 \cdot (-3) \cdot (-3)$ <u>positive; 27</u>   | 23. $4 \cdot (-4) \cdot (-4) \cdot (-4)$ _____    |
| 24. $1 \cdot (-1) \cdot 1 \cdot (-1) \cdot 1$ _____ | 25. $(-2) \cdot (-3) \cdot (-4) \cdot (-5)$ _____ |
| 26. $8(-1)(-2)(-3)$ _____                           | 27. $-9(-1)(3)(-1)(-2)$ _____                     |
| 28. $(-4)(3)(2)(-1)(0)$ _____                       | 29. $-1(5)(6)(7)(8)$ _____                        |

**Find the product.**

- |                                    |  |   |
|------------------------------------|--|---|
| 30. $(-6)(8)(2)$ <u>-96</u>        | 31. $-8 \cdot (2)(2)$ _____              | 32. $9 \cdot (-2)(2)$ _____                 |
| 33. $-5 \cdot 0 \cdot (-12)$ _____ | 34. $(-3)(-4)(9)$ _____                  | 35. $-3(-2)(-4)$ _____                      |
| 36. $-3 \cdot 5(4 \cdot 2)$ _____  | 37. $-9(13 \cdot 0 \cdot 2)$ _____       | 38. $2 \cdot (-5) \cdot 2 \cdot (-2)$ _____ |
| 39. $-6(-11)(1)(2)$ _____          | 40. $-2 \cdot (-4)(-7) \cdot (-3)$ _____ | 41. $8(16) \cdot (-2)(-1)$ _____            |

# I-6 Divide Integers

Name \_\_\_\_\_ Date \_\_\_\_\_

The quotient of two integers with *like signs* is positive.

positive  $\div$  positive = positive  $32 \div 8 = 4$

negative  $\div$  negative = positive  $\frac{-21}{-3} = 7$

The quotient of two integers with *unlike signs* is negative.

positive  $\div$  negative = negative  $30 \div (-6) = -5$

negative  $\div$  positive = negative  $\frac{-18}{9} = -2$

The quotient of any nonzero integer and 1 is that integer.

$12 \div 1 = 12$

The quotient of any nonzero integer and  $-1$  is the opposite of that integer.

$12 \div (-1) = -(12) = -12$

The quotient of zero and any nonzero divisor is zero.

$0 \div 12 = 0$

The quotient of any nonzero integer and zero is undefined.

$12 \div 0$  is undefined.

Find the quotient.

1.  $56 \div 8$

7

2.  $\frac{99}{9}$

3.  $\frac{27}{3}$

4.  $0 \div 9$

5.  $20 \div 0$

6.  $-30 \div (-5)$

7.  $-48 \div (-6)$

8.  $\frac{-35}{-5}$

9.  $\frac{-49}{-1}$

10.  $\frac{-36}{-6}$

11.  $\frac{-143}{-13}$

12.  $40 \div (-2)$

13.  $27 \div (-9)$

14.  $52 \div (-4)$

15.  $\frac{3}{-3}$

16.  $\frac{14}{-1}$

17.  $\frac{63}{-9}$

18.  $\frac{144}{-12}$

19.  $-54 \div 18$

20.  $-92 \div 4$

21.  $-(60 \div 1)$

22.  $-(121 \div 11)$

23.  $\frac{-72}{8}$

24.  $\frac{-96}{8}$

25.  $\frac{|-64|}{|-8|}$

26.  $\frac{|-25|}{|-5|}$

27.  $\frac{-36}{|-12|}$

28.  $-|15| \div 3$

29.  $|-8 \div 2|$

30.  $|-10 \div -(-10)|$

# I-10 Order of Operations

Name \_\_\_\_\_

Date \_\_\_\_\_

To simplify the expression  $7 + (4 + 8) \div 2^2$ , follow the order of operations.

**Grouping symbols:** parentheses ( )  
brackets [ ]  
When an expression contains multiple grouping symbols, begin computing with the innermost set.

**Order of Operations**

- First compute operations within grouping symbols.
- Next simplify exponents.
- Then multiply or divide from left to right.
- Last add or subtract from left to right.

- $7 + (4 + 8) \div 2^2$  ← Compute operations within grouping symbols.  
 $7 + (12) \div 2^2$  ← Simplify exponents.  
 $7 + 12 \div 4$  ← Divide.  
 $7 + 3$  ← Add.  
 $10$  ← Simplify.

**Remember:** You can write division expressions of the form  $\frac{a}{b}$  as  $a \div b$ .

Evaluate each expression.

1.  $3 + (3 \cdot 3)$

$\frac{3 + 9}{12}$

2.  $6 + (20 \div 4)$

3.  $(4 \cdot 3) + (16 - 2)$

4.  $(6 \cdot 8) - (8 \div 2)$

5.  $7(26 - 26 + 3)$

6.  $7(4 \cdot 4 - 2)$

7.  $18 \div (4 + 5)$

8.  $(6 + 18) \div (-8)$

9.  $(-2 \cdot 8) \div (-16 \div 2)$

10.  $(5^2 + 0) \div (5 - 10)$

11.  $3 \cdot 3^2 - 0 + (10 \div 2)$

12.  $11 - (8 \div 4)^3 - 5$

13.  $(20 + 2 \cdot 8 - 6) \div (-6)$

14.  $(8 + 9 \cdot 4 - 4) \div (-4)$

15.  $[3^4 \cdot (-6)] + (15 \div 3)$

16.  $5 + [2 - (4^2 \div 2)] \cdot 3$

17.  $\frac{36}{18 \cdot 2 - 4 \cdot 12}$

18.  $\frac{(5^2 + 9 \cdot 3)}{2 \cdot 13}$

# 5-7 Add and Subtract Mixed Numbers

Name \_\_\_\_\_

Date \_\_\_\_\_

To add mixed numbers, use the LCD to rename the fractional parts with like denominators. Add the fractional parts. Then add the integer parts. For both parts, use the same rules as for adding integers.

Express the sum in simplest form.

$$\begin{aligned} -7\frac{9}{10} &= -7\frac{(9)(4)}{(10)(4)} = -7\frac{36}{40} \\ + -3\frac{3}{8} &= -3\frac{(3)(5)}{(8)(5)} = -3\frac{15}{40} \\ -10\frac{51}{40} &= -11\frac{11}{40} \leftarrow \text{simplest form} \\ \text{So } -7\frac{9}{10} + (-3\frac{3}{8}) &= -11\frac{11}{40} \end{aligned}$$

To subtract mixed numbers, use the LCD to rename the fractional parts with like denominators. Then examine the mixed numbers. If necessary, regroup the integer parts. Then subtract using integer rules.

Express the difference in simplest form.

$$\begin{aligned} 4 &= 3 + \frac{3}{3} = 3\frac{3}{3} \\ -1\frac{2}{3} &\rightarrow -\frac{1\frac{2}{3}}{2\frac{1}{3}} \end{aligned}$$

**Remember:** To find the difference of two numbers, you can use the Subtraction Principle.  
 $4 - 1\frac{2}{3} = 4 + (-1\frac{2}{3})$

Round each mixed number to the nearest integer to estimate the sum or difference.

1.  $6\frac{3}{4} + 9\frac{2}{3}$

2.  $3\frac{5}{9} + (-4\frac{5}{8})$

3.  $-10\frac{8}{9} + (-16\frac{2}{3})$

4.  $-18 - 11\frac{9}{14}$

$7 + 10 = 17$

5.  $7\frac{5}{12} - 4\frac{7}{10}$

6.  $23 + 21\frac{6}{12}$

7.  $6\frac{1}{5} - 2\frac{5}{6}$

8.  $-16\frac{9}{10} + 3\frac{4}{11}$

Find each sum. Express your answer in simplest form.

9.  $3\frac{3}{5} + 7\frac{2}{5}$

10.  $13\frac{4}{9} + 5\frac{5}{9}$

11.  $-9\frac{5}{8} + (-4\frac{7}{8})$

12.  $18\frac{1}{2} + 7\frac{3}{8}$

$10\frac{5}{5} = 11$

13.  $5\frac{1}{9} + 6\frac{1}{18}$

14.  $3\frac{7}{15} + 8\frac{4}{5}$

15.  $3\frac{5}{6} + 4\frac{5}{12}$

16.  $-8\frac{3}{4} + (-9\frac{2}{9})$

17.  $-6\frac{3}{4} + (-9\frac{2}{5})$

18.  $34\frac{5}{6} + (-10\frac{2}{9})$

19.  $108\frac{4}{7} + (-45\frac{1}{9})$

20.  $-17\frac{7}{12} + (29\frac{3}{8})$

# 5-9 Multiply Mixed Numbers

Name \_\_\_\_\_

Date \_\_\_\_\_

Multiply:  $-3\frac{3}{4} \cdot 2\frac{4}{5}$ .

$$-3\frac{3}{4} = -\frac{(3 \cdot 4) + 3}{4} = \frac{-15}{4}$$

← Rename each factor as a fraction greater than or equal to 1.

$$2\frac{4}{5} = \frac{(2 \cdot 5) + 4}{5} = \frac{14}{5}$$

$$\frac{-15}{4} \cdot \frac{14}{5}$$

$$\frac{\overset{3}{\cancel{15}}}{\underset{2}{\cancel{4}}} \cdot \frac{\overset{7}{\cancel{14}}}{\underset{1}{\cancel{5}}}$$

← Simplify. Divide the numerator and the denominator by the GCF.

$$\frac{-3 \cdot 7}{2 \cdot 1}$$

← Multiply the numerators.

← Multiply the denominators.

$$\frac{-21}{2}$$

← Divide to rename as a mixed number.

The signs are different, so the quotient is negative.

$$-10\frac{1}{2}$$

So  $-3\frac{3}{4} \cdot 2\frac{4}{5} = -10\frac{1}{2}$ .

Round each mixed number to the nearest integer, then estimate each product.

1.  $\frac{3}{4} \cdot 4\frac{3}{4} \approx 5$

2.  $4\frac{1}{5} \cdot (-1\frac{1}{3})$

3.  $-5\frac{4}{10} \cdot (-1\frac{4}{7})$

4.  $-3\frac{3}{4} \cdot 2\frac{4}{5}$

$1 \cdot 5 = 5$

Multiply. Express each product in simplest form.

5.  $8 \cdot 7\frac{1}{8}$

6.  $-8\frac{4}{5} \cdot (-10)$

7.  $-16(4\frac{3}{8})$

8.  $-2\frac{4}{9}(18)$

$$\frac{8}{1} \cdot \frac{57}{8} = \frac{57}{1}$$

57

9.  $\frac{1}{5}(8\frac{1}{3})$

10.  $\frac{3}{4}(4\frac{3}{4})$

11.  $\frac{-3}{4}(-12\frac{1}{2})$

12.  $\frac{-1}{4}(-5\frac{1}{7})$

13.  $-2\frac{1}{4} \cdot \frac{1}{3}$

14.  $-3\frac{1}{3} \cdot \frac{1}{2}$

15.  $8\frac{2}{3} \cdot (\frac{-3}{4})$

16.  $1\frac{5}{8} \cdot (\frac{-4}{7})$

17.  $4\frac{2}{3} \cdot (-4)$

18.  $-10 \cdot 3\frac{1}{9}$

19.  $8(-1\frac{1}{5})$

20.  $5(-3\frac{3}{10})$



# 5-2 Greatest Common Factor

Name \_\_\_\_\_

Date \_\_\_\_\_

Here are two ways to find the GCF of 54 and 90:

- List all the factors of each number, then choose the greatest common factor.

Factors of 54: 1, 2, 3, 6, 9, 18, 27, 54

Factors of 90: 1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90

Common factors: 1, 2, 3, 6, 9, 18. The GCF is 18.

- Find the prime factorization of each number, then multiply the common factors.

$$54 = 2 \cdot 3 \cdot 3 \cdot 3$$

$$90 = 2 \cdot 3 \cdot 3 \cdot 5$$

Multiply the common factors:  $2 \cdot 3 \cdot 3 = 18$ .

So the GCF is 18.

**Remember:** Every number has 1 as a factor.

A prime number has exactly two factors, itself and 1.

A fraction is in simplest form when its numerator and denominator have a GCF of 1.

Here are two ways to write  $\frac{54}{90}$  in simplest form:

Divide the numerator and denominator by the GCF.

$$\frac{54 \div 18}{90 \div 18} = \frac{3}{5}$$

Use prime factorization.

$$\frac{54}{90} = \frac{\overset{1}{2} \cdot \overset{1}{3} \cdot \overset{1}{3} \cdot 3}{\underset{1}{2} \cdot \underset{1}{3} \cdot \underset{1}{3} \cdot 5} = \frac{3}{5}$$

To write equivalent fractions for  $\frac{54}{90}$ , multiply or divide both numerator and denominator by the same nonzero number.

Multiply.  $\frac{54 \cdot 2}{90 \cdot 2} = \frac{108}{180}$  | Divide.  $\frac{54 \div 9}{90 \div 9} = \frac{6}{10}$

List the factors of each number. Then find the GCF for each pair of numbers.

1. 24 \_\_\_\_\_ 1, 2, 3, 4, 6, 8, 12, 24

18 \_\_\_\_\_ 1, 2, 3, 6, 9, 18

GCF: \_\_\_\_\_ 6

2. 36 \_\_\_\_\_

20 \_\_\_\_\_

GCF: \_\_\_\_\_

3. 42 \_\_\_\_\_

14 \_\_\_\_\_

GCF: \_\_\_\_\_

4. 96 \_\_\_\_\_

36 \_\_\_\_\_

GCF: \_\_\_\_\_

Find the GCF. Use prime factorization.

5. 30 and 54

$$\begin{aligned} 30 &= 2 \cdot 3 \cdot 5 \\ 54 &= 2 \cdot 3 \cdot 3 \cdot 3 \\ \text{GCF: } &2 \cdot 3 = 6 \end{aligned}$$

6. 27 and 90

7. 14 and 28

8. 35 and 28

9. 17 and 19

10. 43 and 13

11. 25 and 50

12. 50 and 75

13. 8 and 20

# 5-3 Least Common Multiple

Name \_\_\_\_\_

Date \_\_\_\_\_

Here are two ways to find the LCM of the numbers 9, 12, and 18:

**Method 1** List the multiples.

Multiples of 9 = 9, 18, 27, **36**, ...

Multiples of 12 = 12, 24, **36**, ...

Multiples of 18 = 18, **36**, ...

The LCM of 9, 12, and 18 is **36**.

**Method 2** Use prime factorization.

$9 = 3 \cdot 3$     $12 = 2 \cdot 2 \cdot 3$     $18 = 2 \cdot 3 \cdot 3$

Write the greatest number of times each factor occurs among all the numbers.

The product of the factors is the LCM.

The LCM is  $2 \cdot 2 \cdot 3 \cdot 3 = 36$ .

Find the *least common denominator* (LCD) of  $\frac{5}{6}$ ,  $\frac{7}{12}$ , and  $\frac{3}{8}$ .

List the multiples of each denominator.

Then find the first common multiple, or LCM.

6: 6, 12, 18, **24**, ...   12: 12, **24**, ...   8: 8, 16, **24**, ...

The LCM of 6, 8, and 12 is 24.

So the LCD of  $\frac{5}{6}$ ,  $\frac{7}{12}$ , and  $\frac{3}{8}$  is 24.

You can also use the prime factorization of each denominator to find the LCD in the same way that you found the LCM.

Two numbers are *relatively prime* when their only common factor is 1. The LCM of relatively prime numbers is their product.

**Find the LCM for each set of numbers. List the multiples.**

1. 6 and 10

2. 9 and 12

3. 2 and 5

4. 9 and 4

Multiples of  
6 = 6, 12, 18, 24, 30

Multiples of  
10 = 10, 20, 30  
LCM: 30

5. 3, 2, and 8

6. 2, 4, and 6

7. 6, 8, and 4

8. 6, 8, and 9

**Find the LCM for each set of numbers. Use prime factorization.**

9. 6 and 9

10. 8 and 12

11. 9 and 18

12. 48 and 12

LCM: 18

13. 4, 6, 3, and 9

14. 9, 12, 6, and 18

15. 4, 7, 8, and 14

16. 8, 16, 12, and 48

**LESSON**

**Introduction to Algebra**

**8**

**Practice B: Division Equations**

Solve each equation. Check your answers.

1.  $\frac{s}{6} = 7$

\_\_\_\_\_

2.  $\frac{v}{5} = 9$

\_\_\_\_\_

3.  $12 = \frac{q}{7}$

\_\_\_\_\_

4.  $\frac{m}{2} = 16$

\_\_\_\_\_

5.  $26 = \frac{x}{3}$

\_\_\_\_\_

6.  $\frac{n}{8} = 4$

\_\_\_\_\_

7.  $\frac{t}{11} = 11$

\_\_\_\_\_

8.  $\frac{p}{7} = 10$

\_\_\_\_\_

9.  $7 = \frac{v}{8}$

\_\_\_\_\_

Solve each equation. Check your answers.

10.  $10 = \frac{m}{9}$

\_\_\_\_\_

11.  $\frac{r}{5} = 8$

\_\_\_\_\_

12.  $11 = \frac{x}{7}$

\_\_\_\_\_

13.  $9 = \frac{p}{12}$

\_\_\_\_\_

14.  $15 = \frac{d}{5}$

\_\_\_\_\_

15.  $\frac{n}{4} = 28$

\_\_\_\_\_

16.  $\frac{q}{2} = 134$

\_\_\_\_\_

17.  $\frac{u}{16} = 1$

\_\_\_\_\_

18.  $2 = \frac{w}{25}$

\_\_\_\_\_

19. All the seats in the theater are divided into 6 groups. There are 35 seats in each group. Using the variable  $s$ , write and solve a division equation to find how many seats there are in the theater.

\_\_\_\_\_

20. There are 16 ounces in one pound. A box of nails weighs 4 pounds. Using the variable  $w$ , write and solve a division equation to find how many ounces the box weighs.

\_\_\_\_\_

## LESSON

## 5

## Number Theory and Fractions

## Practice B: Equivalent Fractions

Find two equivalent fractions for each fraction.

1.  $\frac{3}{6}$

2.  $\frac{4}{7}$

3.  $\frac{11}{13}$

4.  $\frac{2}{15}$

5.  $\frac{5}{14}$

6.  $\frac{8}{9}$

7.  $\frac{2}{21}$

8.  $\frac{24}{48}$

9.  $\frac{25}{100}$

Find the missing numbers that make the fractions equivalent.

10.  $\frac{4}{7} = \frac{?}{28}$

11.  $\frac{2}{9} = \frac{?}{54}$

12.  $\frac{36}{4} = \frac{?}{1}$

13.  $\frac{56}{8} = \frac{?}{2}$

14.  $1\frac{3}{5} = \frac{?}{25}$

15.  $1\frac{4}{7} = \frac{?}{42}$

Write each fraction in simplest form.

16.  $\frac{15}{25}$

17.  $\frac{8}{36}$

18.  $\frac{12}{18}$

19.  $\frac{10}{24}$

20. Billy had 24 trading cards. He gave 7 of his cards to Miko and 9 of his cards to Teri. What fraction of his original 24 cards does Billy have left? Write two equivalent fractions for that amount.

21. Beth and Kristine ride their bikes to school in the morning. Beth has to ride  $1\frac{7}{32}$  miles. Kristine has to ride  $\frac{39}{32}$  miles. Who rides the farthest to reach school? Explain.

**LESSON**  
**6**

**Number Theory and Fractions**

**Practice B: Mixed Numbers and Improper Fractions**

Write each mixed number as an improper fraction.

1.  $3\frac{1}{2}$

\_\_\_\_\_

2.  $2\frac{1}{3}$

\_\_\_\_\_

3.  $5\frac{1}{4}$

\_\_\_\_\_

4.  $1\frac{3}{7}$

\_\_\_\_\_

5.  $3\frac{3}{4}$

\_\_\_\_\_

6.  $4\frac{1}{3}$

\_\_\_\_\_

7.  $2\frac{3}{5}$

\_\_\_\_\_

8.  $3\frac{5}{6}$

\_\_\_\_\_

9.  $7\frac{1}{3}$

\_\_\_\_\_

Write each improper fraction as a mixed number or whole number. Tell whether your answer is a mixed number or whole number.

10.  $\frac{17}{3}$

\_\_\_\_\_

11.  $\frac{40}{8}$

\_\_\_\_\_

12.  $\frac{48}{7}$

\_\_\_\_\_

13.  $\frac{33}{10}$

\_\_\_\_\_

14.  $\frac{50}{8}$

\_\_\_\_\_

15.  $\frac{83}{9}$

\_\_\_\_\_

16.  $\frac{104}{8}$

\_\_\_\_\_

17.  $\frac{121}{6}$

\_\_\_\_\_

18.  $\frac{78}{11}$

\_\_\_\_\_

19. The hotel ordered an extra-long rug for a hallway that is  $\frac{123}{2}$  feet long. What is the rug's length in feet and inches? Remember, 1 foot = 12 inches.

\_\_\_\_\_

20. During this year's football-throwing contest, John threw the ball  $49\frac{2}{3}$  feet. Sharon threw the ball 51 feet. Who threw the ball  $\frac{153}{3}$  feet?

\_\_\_\_\_

**LESSON**  
**7**

**Proportional Relationships**

**Practice B: Percent of a Number**

Find the percent of each number.

1. 25% of 56                      2. 10% of 110                      3. 5% of 150                      4. 90% of 180

\_\_\_\_\_

5. 125% of 48                      6. 225% of 88                      7. 2% of 350                      8. 285% of 200

\_\_\_\_\_

9. 150% of 125                      10. 46% of 235                      11. 78% of 410                      12. 0.5% of 64

\_\_\_\_\_

Find the percent of each number. Check whether your answer is reasonable.

13. 55% of 900                      14. 140% of 50                      15. 75% of 128                      16. 3% of 600

\_\_\_\_\_

17. 16% of 85                      18. 22% of 105                      19. 0.7% of 110                      20. 95% of 500

\_\_\_\_\_

21. 3% of 750                      22. 162% of 250                      23. 18% of 90                      24. 23.2% of 125

\_\_\_\_\_

25. 0.1% of 950                      26. 11% of 300                      27. 52% of 410                      28. 250% of 12

\_\_\_\_\_

29. The largest frog in the world is the goliath, found in West Africa. This type of frog can grow to be 12 inches long. The smallest frog in the world is about 4% as long as the goliath. What is the approximate length of the smallest frog in the world?

\_\_\_\_\_