

Name _____

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Chapter 1 Integers

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Parent Signature _____ Date _____

Student Signature _____ Date _____

Teacher Signature _____ Date _____

Name _____ Class Period _____

Evaluation of Notes

Criteria	10 – Unsatisfactory	20 – Satisfactory	25 – Good	30 – Excellent	Score
Set-up and Neatness	<ul style="list-style-type: none"> • No name • Paper appears to have been scrunched, put through a blender, or used as a napkin 	<ul style="list-style-type: none"> • Name • Handwriting is hard to read. 	<ul style="list-style-type: none"> • Name and class period • Some extra notes added 	<ul style="list-style-type: none"> • Name and class period • Many extra notes added 	_____
Completion of practice	<ul style="list-style-type: none"> • One or more sections are blank 	<ul style="list-style-type: none"> • Some practice is not complete • Not all work is shown 	<ul style="list-style-type: none"> • All practice is complete • Some work not shown 	<ul style="list-style-type: none"> • All practice complete • All work shown 	_____
Text marking	<ul style="list-style-type: none"> • None of the notes are highlighted or underlined 	<ul style="list-style-type: none"> • One or more sections are missing highlighting or underlining 	<ul style="list-style-type: none"> • Each section contains highlighting or underlining. 	<ul style="list-style-type: none"> • Every key point is highlighted or underlined and it is done so neatly. 	_____
Completed on time or within one day of being absent? +10 points!					_____
Total Score					_____

Evaluation of Homework

Criteria	0 – Unsatisfactory	30 – Satisfactory	40 – Good	50 – Excellent	Score
Set-up and Neatness	<ul style="list-style-type: none"> • No name • Paper appears to have been scrunched, put through a blender, or used as a napkin 	<ul style="list-style-type: none"> • Name • Handwriting is hard to read. 	<ul style="list-style-type: none"> • Name and class period • Some answers are boxed 	<ul style="list-style-type: none"> • Name and class period • All answers are boxed 	_____
Completion of practice	<ul style="list-style-type: none"> • The homework is not done or attempted. 	<ul style="list-style-type: none"> • Some problems are not done. • Not all work is shown 	<ul style="list-style-type: none"> • All practice is complete • Some work not shown 	<ul style="list-style-type: none"> • All practice complete • All work shown 	_____
Total Score					_____

1.1 Practice A

Find the absolute value.

1. $|-7|$ 2. $|12|$ 3. $|-13|$ 4. $|0|$

Copy and complete the statement using $<$, $>$, or $=$.

5. $|-4|$? 2 6. 7 ? $|-7|$ 7. $|8|$? 5

8. While playing a game, you move back 5 spaces with your roll of the number cube. Your friend moves forward 3 spaces. Write each amount as an integer.

Order the values from least to greatest.

9. $-1, |5|, |4|, 8, |-1|$ 10. $|2|, 0, |5|, 6, |3|$

Simplify the expression.

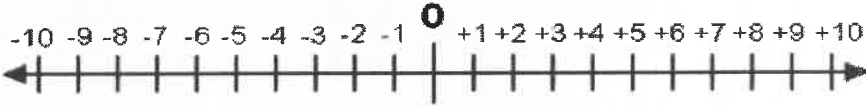
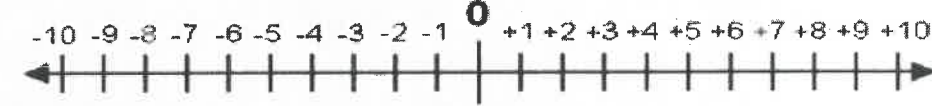
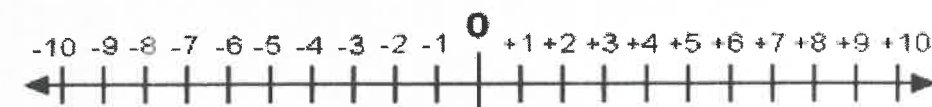
11. $|-19|$ 12. $-|-8|$ 13. $-|13|$

14. You are kite sailing on the ocean. The table gives your height at different times.

Time (seconds)	0	1	2	3
Height (feet)	2	4	6	8

- a. How many feet do you move each second?
 b. What is your speed? Give the units.
 c. Is your velocity positive or negative?
 d. What is your velocity? Give the units.
15. Use a number line.
- a. Graph and label the following points on a number line: $T = 1$, $L = -8$, $E = 4$, $A = -5$. What word do the letters spell?
 b. Graph and label the absolute value of each point in part (a). What word do the letters spell now?
16. Write an integer whose absolute value is greater than itself.



MAFS.7.NS.1.1	Apply and extend previous understandings of addition and subtraction to add and subtract <u>rational numbers</u> (any number that can be written as a fraction- includes integers); represent addition and subtraction on a horizontal or vertical number line diagram; describe situations in which opposite quantities combine to make 0.
Essential Question	How do you add integers? In this lesson I am <i>using counters, number lines, or rules to understand adding integers</i> , so I can use it to <i>simplify expressions</i> .
1.2 Adding Integers	Adding integers with the same signs= add, keep sign Adding integers with different signs= subtract, use bigger sign
<u>Opposites</u>	Two numbers that are the same distance from 0, but on opposite sides of 0. <i>Example: 7 and -7</i>
<u>Additive Inverse</u>	A number and its opposite always sum (add) to zero. <i>Example: $7 + (-7) = 0$</i>
“Same signs, add and keep” Homework: 1.2 Practice A #1-12	Add. 1. $7 + 13$ 2. $-8 + (-5)$ 3. $-20 + (-15)$
“Different signs, subtract”	Add. 4. $-2 + 11$ 5. $9 + (-10)$ 6. $-31 + 31$
	You start hiking at an elevation that is 80 meters below base camp. You increase your elevation by 42 meters. What is the new elevation with respect to base camp?
	$4 + 3 = \underline{\quad}$  $7 + (-3) = \underline{\quad}$  $-6 + (-3) = \underline{\quad}$ 

1.2 Practice A**Add.**

1. $8 + 2$

2. $-5 + (-3)$

3. $-9 + (-3)$

4. $6 + (-6)$

5. $4 + (-4)$

6. $9 + (-6)$

7. $5 + (-2)$

8. $7 + (-13)$

9. $-18 + 1$

10. $-12 + (-5)$

11. $0 + (-7)$

12. $12 + (-15)$

13. Your bank account has a balance of $-\$21$. You deposit $\$50$. What is your new balance?

Tell how the Commutative and Associative Properties of Addition can help you find the sum mentally. Then find the sum.

14. $8 + (-5) + (-8)$

15. $-4 + 9 + 4$

16. $-5 + 12 + (-7)$

Add.

17. $7 + 5 + (-2)$

18. $-13 + 7 + (-3)$

19. $17 + (-5) + (-1)$

20. $4 + 8 + (-8)$

21. $-12 + (-4) + 9$

22. $-10 + 10 + (-3)$

23. $(-11) + 5 + (-12)$

24. $7 + 15 + (-7)$

25. $-12 + (-5) + (-10)$

Use mental math to solve the equation.

26. $n + (-8) = 5$

27. $4 + c = 0$

28. $-6 + k = -14$

29. In golf, a golfer must have a score of 0 in order to be at par. A golfer scores 2 above par on the first hole, 1 below par on the second hole, and 2 below par on the third hole. Which expression can be used to decide whether the golfer is at par after the first three holes?

$(-2) + 1 + 2$

$2 + (-1) + 2$

$2 + (-1) + (-2)$

30. Copy and complete the magic square so that each row and column has a magic sum of 0. Use each integer from -4 to 4 exactly once.

3		-2
		2

MAFS.7.NS.1.1	Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$.						
Essential Question	How do you subtract integers? In this lesson I am <i>using a rule called "adding the opposite"</i> , so I can <u>see subtraction as adding</u> and use rules I already know to solve expressions.						
1.3 Subtracting Integers	"add the opposite" (make the minus a plus and take the opposite sign of the number behind it) then use rules from adding <i>Example: $3 - 4 = 3 + (-4) = -1$</i>						
Homework: 1.3 Practice A #1-12	Subtract. <table style="width: 100%; border: none;"> <tr> <td style="width: 33%; text-align: center;">1. $8 - 3$</td> <td style="width: 33%; text-align: center;">2. $9 - 17$</td> <td style="width: 33%; text-align: center;">3. $-3 - 3$</td> </tr> <tr> <td style="text-align: center;">4. $-14 - 9$</td> <td style="text-align: center;">5. $9 - (-8)$</td> <td style="text-align: center;">6. $-12 - (-12)$</td> </tr> </table>	1. $8 - 3$	2. $9 - 17$	3. $-3 - 3$	4. $-14 - 9$	5. $9 - (-8)$	6. $-12 - (-12)$
1. $8 - 3$	2. $9 - 17$	3. $-3 - 3$					
4. $-14 - 9$	5. $9 - (-8)$	6. $-12 - (-12)$					
Homework: 1.3 Practice A #16-24	Evaluate the expression. <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">7. $-9 - 16 - 8$</td> <td style="width: 50%; text-align: center;">8. $-4 - 20 - 9$</td> </tr> <tr> <td style="text-align: center;">9. $0 - 9 - (-5)$</td> <td style="text-align: center;">10. $-8 - (-6) - 0$</td> </tr> <tr> <td style="text-align: center;">11. $15 - (-20) - 20$</td> <td style="text-align: center;">12. $-14 - 9 - 36$</td> </tr> </table>	7. $-9 - 16 - 8$	8. $-4 - 20 - 9$	9. $0 - 9 - (-5)$	10. $-8 - (-6) - 0$	11. $15 - (-20) - 20$	12. $-14 - 9 - 36$
7. $-9 - 16 - 8$	8. $-4 - 20 - 9$						
9. $0 - 9 - (-5)$	10. $-8 - (-6) - 0$						
11. $15 - (-20) - 20$	12. $-14 - 9 - 36$						
Homework: 1.3 Practice A #29	13. The highest elevation in Mexico is 5700 meters, on Pico de Orizaba. The lowest elevation in Mexico is -10 meters, in Laguna Salada. Find the range of elevations in Mexico.						
	The temperature falls from 3°C to -4°C . What is the <u>difference</u> in these temperatures?						
	At 8:00, the temperature was 6 degrees Celsius ($^{\circ}\text{C}$). Three hours later, the temperature was -13°C . By how many degrees Celsius did the temperature change?						

1.3 Practice A**Subtract.**

1. $3 - 8$ 2. $4 - (-5)$ 3. $-6 - 4$ 4. $-9 - (-6)$
 5. $10 - (-9)$ 6. $12 - 4$ 7. $-15 - 7$ 8. $-6 - (-14)$
 9. $-1 - (-3)$ 10. $15 - (-7)$ 11. $20 - (-10)$ 12. $-31 - 14$

13. You are scuba diving at -8 feet. You dive 5 feet deeper. What is your position in the water?
 14. Write $7 - 3$ using addition.
 15. Write $5 + (-3)$ using subtraction.

Evaluate the expression.

16. $8 - 12 - (-6)$ 17. $8 - (-8) - 3$ 18. $0 - (-4) - 8$
 19. $9 - (-4) + 1$ 20. $7 - 12 - (-4)$ 21. $-11 - (-8) - (-3)$
 22. $-14 - 6 - (-2)$ 23. $8 + 0 - (-11)$ 24. $8 + 13 - (-5)$

Use mental math to solve the equation.

25. $a - 7 = 3$ 26. $b - (-8) = -3$ 27. $6 - c = 10$
 28. Write two different pairs of negative integers, x and y , that make the statement $x - y = 2$ true.

29. The table shows the highest and lowest elevations for two cities.

City	Highest elevation (feet)	Lowest elevation (feet)
Long Beach, CA	360	-7
New Orleans, LA	25	-8

- a. Find the range of elevations for Long Beach.
 b. Find the range of elevations for New Orleans.
 c. One of the cities has an average elevation of about 2 feet below sea level. Which city is it?

MAFS.7.NS.1.2	Apply and extend previous understandings of multiplication to multiply rational numbers.								
Essential Question	How do you multiply integers? In this lesson I am <i>using a sign rule</i> , so I can <i>use it to multiply expressions</i> .								
1.4 Multiplying Integers	Same signs- multiply numbers and get a positive answer Different signs- multiply numbers and get a negative answer								
Homework: 1.4 Practice A #1-12 And #14-19	<p>Multiply.</p> <table border="0"> <tr> <td>1. $5 \cdot 5$</td> <td>2. $4(11)$</td> </tr> <tr> <td>3. $-1(-9)$</td> <td>4. $-7 \cdot (-8)$</td> </tr> <tr> <td>5. $12 \cdot (-2)$</td> <td>6. $4(-6)$</td> </tr> <tr> <td>7. $-10(-6)(0)$</td> <td>8. $-7 \cdot (-5) \cdot (-4)$</td> </tr> </table>	1. $5 \cdot 5$	2. $4(11)$	3. $-1(-9)$	4. $-7 \cdot (-8)$	5. $12 \cdot (-2)$	6. $4(-6)$	7. $-10(-6)(0)$	8. $-7 \cdot (-5) \cdot (-4)$
1. $5 \cdot 5$	2. $4(11)$								
3. $-1(-9)$	4. $-7 \cdot (-8)$								
5. $12 \cdot (-2)$	6. $4(-6)$								
7. $-10(-6)(0)$	8. $-7 \cdot (-5) \cdot (-4)$								
Homework: 1.4 Practice A #20-28	<p>Evaluate the expression.</p> <table border="0"> <tr> <td>9. $(-3)^2$</td> <td>10. $(-2)^3$</td> <td>11. -7^2</td> <td>12. -6^3</td> </tr> </table>	9. $(-3)^2$	10. $(-2)^3$	11. -7^2	12. -6^3				
9. $(-3)^2$	10. $(-2)^3$	11. -7^2	12. -6^3						
Homework: 1.4 Practice A #31	13. A manatee population decreases by 15 manatees each year for 3 years. Find the total change in the manatee population.								

1.4

Practice A

Multiply.

- 1. $4 \cdot (-3)$ 2. $-6 \cdot 5$ 3. $-8(-2)$ 4. $9 \cdot 6$
- 5. $0 \cdot (-7)$ 6. $-12(-3)$ 7. $11 \cdot 7$ 8. $5(-5)$
- 9. $-13 \cdot 7$ 10. $-1 \cdot 9$ 11. $2(-12)$ 12. $-9 \cdot (-9)$

13. A water tank leaks 5 gallons of water each day. What integer represents the change in the number of gallons of water in the tank after 7 days?

Multiply.

- 14. $2 \cdot (-3) \cdot 5$ 15. $-5(-4)(-1)$ 16. $7 \cdot 2 \cdot (-3)$
- 17. $0 \cdot (-8) \cdot 6$ 18. $-6 \cdot 4 \cdot (-2)$ 19. $5(-4)(-5)$

Evaluate the expression.

- 20. $(-3)^2$ 21. -3^2 22. $(-2)^3$
- 23. -5^2 24. $-3 \cdot (-4)^2$ 25. $(-7)^2 \cdot 2$
- 26. $|-3| \cdot (-6)$ 27. $-5(-2) - 3(-4)$ 28. $2 \cdot (-3)^2 - 5^2$

Find the next two numbers in the pattern.

- 29. 6, -12, 24, -48, ... 30. 9, -27, 81, -243, ...

31. An elevator is 180 feet above the first floor. Each second it descends 12 feet.

a. What integer is the change in the height of the elevator each second?

b. Copy and complete the table.

Time	3 sec	6 sec	9 sec
Height			

c. Estimate how many seconds it takes the elevator to get to the first floor. Explain your reasoning.

d. From the first floor, it takes 4 seconds to reach the basement floor. What is the height of the basement floor with respect to the first floor?



MAFS.7.NS.1.2	Apply and extend previous understandings of division to divide rational numbers.
Essential Question	How do you divide integers? In this lesson I am <i>using a sign rule</i> , so I can <i>use it to divide expressions</i> .
1.5 Dividing Integers	Same signs- divide numbers and get a positive answer Different signs- divide numbers and get a negative answer
Homework: 1.5 Practice A #1-12	<p>Divide.</p> <p>1. $14 \div 2$ 2. $-32 \div (-4)$ 3. $-40 \div (-8)$</p> <p>4. $0 \div (-6)$ 5. $\frac{-49}{7}$ 6. $\frac{21}{-3}$</p>
	<p>Evaluate the expression when $a = -18$ and $b = -6$.</p> <p>7. $a \div b$ 8. $\frac{a+6}{3}$ 9. $\frac{b^2}{a} + 4$</p>
Homework: 1.5 Practice A #21	10. The height of the tide at the Bay of Fundy in New Brunswick decreases 36 feet in 6 hours. What is the mean hourly change in the height?

Find the mean of the integers.

11. 5, -15, 7, -13, 1

12. -21, -34, -37, -52, -56

13. -3, -1, 0, 1, 3

14. The table shows the temperature in Des Moines, Iowa, for certain times during a particular day.

Time	3 A.M.	8 A.M.	1 P.M.	5 P.M.	10 P.M.
Temperature	-15°F	-6°F	22°F	10°F	-11°F

- What are the high and low temperatures?
- Find the range of temperatures.
- Find the change in temperature from 5 P.M. to 10 P.M.
- Based on the given five temperatures, what is the average temperature for the day?
- Explain why your answer to part (d) is not an accurate average temperature for the day.

1.5 Practice A**Divide, if possible.**

1. $8 \div (-4)$ 2. $-15 \div (-3)$ 3. $\frac{-10}{5}$ 4. $0 \div (-7)$

5. $-35 \div 7$ 6. $\frac{18}{-6}$ 7. $-72 \div 9$ 8. $-5 \div 5$

9. $\frac{15}{0}$ 10. $12 \div (-2)$ 11. $\frac{-56}{-8}$ 12. $21 \div (-3)$

13. Your team dives for 28 lobsters over 7 days. What is the average daily lobster catch?

Find the mean of the integers.

14. 5, -7, 12, -10, 15 15. -16, -27, 21, -19, 14, -3

Evaluate the expression.

16. $6 - 12 + (-3)$ 17. $|-16| + (-2)^2 - 4^2$ 18. $\frac{-10 + (-2)^3}{-3}$

Find the next two numbers in the pattern.

19. -96, 48, -24, 12, ... 20. 12,500, -2500, 500, -100, ...

21. A skateboarder descends on a ramp from 172 feet to 67 feet in 15 seconds. What is the average change in height per second?

22. The velocity (in feet per second) of a bouncing ball was recorded every second. The table shows the velocity for each second.

Time (sec)	1	2	3	4	5
Velocity (ft/sec)	-15	-6	2	10	-11

- What is the average velocity of the bouncing ball over the 5 seconds?
- What is the highest recorded speed of the bouncing ball? Is the ball going up or down at this speed?
- During the 5 second period, did the ball spend more time going up or going down? Explain your reasoning.
- Between which two seconds did the ball change from going up to going down? Explain your reasoning.

Chapter
1

Take Home Quiz #1
For use after Section 1.3

Find the absolute value.

1. $|8|$

2. $|-3|$

Complete the statement using $<$, $>$, or $=$.

3. 4 $\underline{\hspace{1cm}}$ $|-8|$

4. $|-5|$ $\underline{\hspace{1cm}}$ $|-10|$

5. 6 $\underline{\hspace{1cm}}$ $|2|$

6. $|-3|$ $\underline{\hspace{1cm}}$ 3

Order the values from least to greatest.

7. $3, |-5|, -2, 1, -4$

8. $11, |-9|, 0, |8|, -5$

Evaluate the expression.

9. $-12 + 5$

10. $4 + (-2)$

11. $-3 + (-7)$

12. $-4 - 3$

13. $9 - (-2)$

14. $-3 - (-7)$

15. A scuba diver dives down 20 feet into the ocean. He then swims 11 feet back up towards the surface. What is the position of the scuba diver relative to the surface?

16. You and your friend play a video game. You have a final score of 40 points, and your friend has a final score of -21 points. By how many points did you win?

17. The table shows the score for a golfer on the first nine holes. What is his score through nine holes?

Hole	1	2	3	4	5	6	7	8	9
Score	-1	0	+2	+1	-2	-1	-1	+2	-1

Answers

1. _____

2. _____

3. See left.

4. See left.

5. See left.

6. See left.

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

Chapter 1 **Take Home Quiz #2**
For use after Section 1.5

Tell whether the value of the expression is *positive* or *negative* without evaluating.

- 1. $-36 \div 4$
- 2. $-5 \cdot 16$
- 3. $72 \div 8$
- 4. $-13(-9)$

Evaluate the expression.

- 5. $-8 \cdot 5$
- 6. $-3(-4)$
- 7. $9(-7)$
- 8. $-18 \div 6$
- 9. $\frac{48}{-12}$
- 10. $27 \div (-3)$

Answers

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____
- 11. _____
- 12. _____
- 13. _____
- 14. a. _____
b. _____
- 15. a. _____
b. _____
c. _____

- 11. You lose 2 points every time you forget to write your name on a test. You have forgotten to write your name 4 times. What integer represents your change in points from forgetting to write your name?
- 12. The cost for a movie ticket is \$7. The cost is reduced to \$5 for groups of 10 or more. How many people must be in a group for them to save a total of \$30?
- 13. You are swimming each 25-yard length of a swimming pool 3 seconds faster than your personal best. What integer represents your change in time of your personal best after 200 yards?
- 14. Pete owes his brother \$35 from five weeks of borrowing money.
 - a. What is the mean amount Pete borrowed from his brother each week?
 - b. If Pete continues to borrow money, how much money will he owe after three more weeks?
- 15. Seven days ago, the gas tank on Rosa's car was filled with 20 gallons of gasoline. Today there are 6 gallons of gasoline.
 - a. What integer represents the change of gasoline in the past seven days?
 - b. What is the mean change in gasoline in gallons per day?
 - c. What is the fuel efficiency, in miles per gallon, of Rosa's car if she drove 490 miles in the past seven days?

Chapter

1

Test Review

Find the absolute value.

1. $|12|$

2. $|-30|$

3. $|-44|$

Complete the statement using $<$, $>$, or $=$.

4. $|-3|$ ___ -7

5. 2 ___ $|-2|$

6. 5 ___ $|-8|$

Order the values from least to greatest.

7. $|-3|$, $|-5|$, -4 , 7 , $|0|$

8. $|-6|$, 10 , -2 , -6 , $|-7|$

9. The temperature in St. Louis, Missouri, is 31°F . The temperature in Duluth, Minnesota, is -29°F . Is the temperature in St. Louis or Duluth closer to 0°F ?

Evaluate the expression.

10. $(-124) + 25 + (-87)$

11. $97 + (-118) + 0$

12. $-17 - (-56) + 14$

13. $15 - (-98) + (-150)$

Multiply.

14. $-12 \cdot 5 \cdot (-3)$

15. $-2(-21)(-5)$

Divide, if possible.

16. $-78 \div (-6)$

17. $-65 \div 0$

18. The water level is 3 feet below your dock. The tide goes out, and the water level lowers 1 foot. A storm surge comes in, and the water level rises 2 feet. Write an integer to indicate the new water level.

Evaluate the expression.

20. $-13 + (-56) \div 14 + 9$

21. $-16 \bullet 3 - (-36) \div 12$

Find the mean of the integers.

22. $-45, -20, -35, -25, -40$

23. $17, -25, 3, -29, -15, 7$

24. Your video game scores are 64, -13, 73, -5, and 36.

a. What were your lowest and highest scores?

b. What was your mean score?

25. What number must be added to 15, -6, and 12 to have a mean of 5?

Use mental math to solve the equation.

26. $-24 + m = -47$

27. $d - (-7) = -19$

Find the next two numbers in the pattern.

28. $4, -12, 36, -108, \dots$

29. $-800, 400, -200, 100, \dots$

30. The table shows a bank account balance for a 5-day period.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Balance	-21	-55	102	125	-16

a. Which day had the balance closest to zero?

b. Find the range of balances for the 5-day period.

c. What integer represents the change in balance from Monday to Tuesday?

d. Based on the given five balances, what is the average balance for the 5-day period?