

Name: _____

Unit 1: Number Sense

Date: _____ Per: _____

Homework 1: Adding & Subtracting Integers
(Day 1)**** This is a 2-page document! ******Directions:** Write an integer for each situation.

1. an 8 degree rise in temperature

2. 47 feet below sea level

3. a 19-yard gain

4. overdrawing an account by \$124

5. two strokes below par

6. a 20-foot extension

Directions: Order the integers from least to greatest.

7. {5, -6, 12, -1, -7, 0, 8}

8. {-22, -19, -25, 14, -11, 9, -7}

Directions: Find each value.

9. $|16| =$

10. $|-25| =$

11. $|-11| =$

12. $|37| =$

Directions: Place a $<$ or $>$ in the circle to complete the statement.

13. $-9 \bigcirc 4$

14. $-13 \bigcirc -20$

15. $24 \bigcirc -17$

16. $-15 \bigcirc -40$

17. $|-6| \bigcirc -7$

18. $18 \bigcirc |-22|$

19. $|-15| \bigcirc |-14|$

20. $|-1| \bigcirc |-2|$

Directions: Find each sum.

21. $4 + 15$

22. $-6 + 14$

23. $-22 + 7$

24. $14 + 27$

25. $-1 + 20$

26. $-32 + 5$

27. $-8 + 30$

28. $-17 + 3$

29. $-50 + 48$

30. $19 + 16$

31. $-12 + 2$

32. $-13 + 13$

Directions: Find each difference.

33. $18 - 3$

34. $17 - 8$

35. $-1 - 4$

36. $16 - 18$

37. $5 - 20$

38. $-23 - 8$

39. $-16 - 13$

40. $-11 - 5$

41. $15 - 9$

42. $29 - 21$

43. $-23 - 8$

44. $11 - 19$

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Directions: Read each problem carefully, then find the sum or difference.

45. On the first play of a game, a running back gained 7 yards. On the next play, he lost 19 yards. Find the change in yards in the two plays.

46. Mary's bank account was overdrawn by \$21. If she deposits \$60, find the new balance.

47. The temperature was 61 degrees at sunrise. By 2:00 PM, the temperature had risen by 12 degrees. Find the temperature at 2:00 PM.

48. Ben and Sam are diving in a lake. At 14 feet below the surface, Ben spots Sam 9 feet directly below him. Find Sam's depth.

49. A hotel elevator is on the 14th floor. If it goes up 5 floors, then goes down 8 floors, what floor is it now on?

50. Laura is 32 feet below the surface in a cave. If she ascends 8 feet, find her new position relative to the surface.

51. In Jeopardy, if you answer a question incorrectly, you lose points. If Owen's score is 200 points, then he answers a 350-point question incorrectly, find his score.

52. Janie has \$48 in her checking account. If she writes a check for \$19, find her new account balance.

53. Maya is playing golf. On her first two holes, she scored one under par then six over par. Find her score after the first two holes.

54. The temperature at midnight is -3 degrees. The weatherman predicts the temperature to be 25 degrees warmer by noon the next day. Find the temperature at noon.

55. Braden's credit card balance was \$162. If he charges \$54 then makes a \$75 payment, find the balance on his card.

56. Two babies, Carter and Alyssa, were due on the same day. Carter was born 9 days before his due date. If Alyssa was born two weeks after Carter, how many days past her due date was she born?

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Homework 2: Adding & Subtracting Integers
(Day 2)**Directions:** Find each sum or difference.

1. $8 + (-2)$

2. $25 + (-6)$

3. $5 + (-12)$

4. $17 + (-8)$

5. $8 + (-19)$

6. $26 + (-32)$

7. $-1 + (-6)$

8. $-4 + (-13)$

9. $-18 + (-7)$

10. $2 - (-16)$

11. $10 - (-3)$

12. $29 - (-5)$

13. $4 - (-18)$

14. $12 - (-14)$

15. $39 - (-7)$

16. $-3 - (-8)$

17. $-11 - (-2)$

18. $-24 - (-7)$

19. $3 + (-14)$

20. $-27 + (-3)$

21. $8 - (-15)$

22. $-9 + (-19)$

23. $-13 - (-20)$

24. $-20 + (-2)$

Directions: Read each problem carefully, then find the sum or difference.

25. On the first play of a game, the Eagles running back lost three yards. On their next play, the quarterback was sacked for a loss of fourteen yards. Find the total yards in these two plays.

26. Brett and Max are diving. Brett is 34 feet below the surface and Max is 25 feet below the surface. How many feet above Brett is Max?

27. Once a hot-air balloon reached its highest point, it dropped 25 feet. Then five minutes later, it dropped another 13 feet. Find its total change in altitude during this time.

28. At sunset, the temperature was 4 degrees. Then at sunrise the next morning, it was -7 degrees. What is the difference between these temperatures?

29. The golfer with the highest score in a tournament was nine over par. The golfer with the lowest score was five below par. What was the range in golf scores?

30. Nick's bank account balance was \$21. If he writes a check for \$30 and his bank charges him \$35 for overdrawing his account, find his account balance.

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Homework 3: Multiplying & Dividing Integers

**Directions:** Find each product or quotient.

1. 8×5

2. $-12 \cdot -3$

3. $-4(9)$

4. 7×-8

5. $-9 \cdot 6$

6. 5×-16

7. $-1(-11)$

8. $-10 \cdot -8$

9. $5(-6)$

10. -4×13

11. $-5 \cdot -4$

12. $7(7)$

13. $18 \div 3$

14. $-48 \div -6$

15. $56 \div -4$

16. $-45 \div 9$

17. $21 \div 7$

18. $0 \div -2$

19. $\frac{-50}{-5}$

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

21. $\frac{81}{-3}$

22. $\frac{-8}{-4}$

23. $\frac{60}{5}$

24. $\frac{16}{0}$

Directions: Read each problem carefully, then find the product or quotient.

25. Jack read 90 pages of a book in six hours. What is the average number of pages he read each hour?

26. Sean burns 9 calories per minute when he runs. How many calories does he burn if he runs for 45 minutes?

27. You lose three points each time you answer a question incorrectly in a trivia game. If you answer eight questions in a row incorrectly, what is the change in your score?

28. The number of employees at a company decreased by 60 over five years. What is the average yearly change in employees?

29. A hiker climbed down a 90-foot hill in five minutes. What is his average change in elevation per minute?

30. The price of a stock decreased \$2 each day for seven consecutive days. What was the total change in value of the stock over the seven days?

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Homework 4: Intro to Fractions, Adding & Subtracting Fractions with Like Bases

**** This is a 2-page document! ****

Directions: Write each fraction in simplest form.

1. $\frac{16}{18}$

2. $-\frac{6}{39}$

3. $-\frac{7}{28}$

4. $\frac{18}{45}$

5. $-\frac{20}{64}$

6. $\frac{84}{96}$

Directions: Write each improper fraction as a mixed number in simplest form.

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

8. $-\frac{30}{4}$

9. $\frac{42}{12}$

10. $-\frac{68}{24}$

11. $-\frac{72}{27}$

12. $\frac{56}{6}$

Directions: Write each mixed number as an improper fraction in simplest form.

13. $2\frac{2}{7}$

14. $-1\frac{11}{12}$

15. $-7\frac{1}{6}$

16. $4\frac{5}{10}$

17. $2\frac{18}{27}$

18. $-5\frac{6}{8}$

Directions: Find each sum or difference. Give each answer as mixed number in simplest form.

19. $\frac{3}{8} + \frac{7}{8}$

20. $\frac{19}{20} - \frac{3}{20}$

21. $3\frac{1}{12} - \frac{5}{12}$

22. $\frac{7}{18} + 1\frac{8}{18}$

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23. $8\frac{7}{10} - \frac{21}{10}$

24. $6\frac{5}{16} - 3\frac{11}{16}$

25. $\frac{5}{6} + \left(-\frac{1}{6}\right)$

26. $-\frac{7}{12} - \frac{5}{12}$

27. $2\frac{3}{8} - \left(-2\frac{7}{8}\right)$

28. $1\frac{7}{10} + \left(-6\frac{1}{10}\right)$

29. Bethany and Heather ran a mile in gym class. Bethany finished in $8\frac{7}{16}$ minutes and Heather finished in $10\frac{3}{16}$ minutes. Find the difference in their times.

30. Luke and Evie are twins. At birth, Luke was $6\frac{3}{10}$ pounds at birth and Evie was $5\frac{2}{10}$ pounds. What was their combined birth weight?

31. A utility pole is $40\frac{4}{9}$ feet tall. If $5\frac{8}{9}$ feet is cut off the top, find the height of the pole.

32. Harper has two cans of paint that he would like to combine into one can. If one can contains $6\frac{11}{12}$ ounces and the other can contains $22\frac{7}{12}$ ounces, can he pour them together into one 29-ounce can? Explain.

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Homework 5: Adding & Subtracting
Fractions with Unlike Bases

**** This is a 2-page document! ****

Directions: Find each sum or difference. Give each answer as mixed number in simplest form.

1. $\frac{5}{6} - \frac{7}{12}$

2. $\frac{2}{3} + \frac{1}{5}$

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

4. $1\frac{3}{4} - 3\frac{9}{10}$

5. $\frac{1}{9} + 4\frac{11}{12}$

6. $1\frac{1}{8} + 1\frac{1}{6}$

7. $-1\frac{5}{9} + \left(-\frac{2}{3}\right)$

8. $-1\frac{3}{5} + \left(-1\frac{1}{12}\right)$

9. $-2 - \left(-\frac{3}{8}\right)$

10. $2\frac{1}{6} - \left(-1\frac{2}{9}\right)$

11. $\frac{1}{2} + \left(-5\frac{9}{10}\right)$

12. $4\frac{5}{6} - \left(-\frac{13}{16}\right)$

13. Sarah ran $4\frac{7}{8}$ miles, then walked $1\frac{11}{12}$ miles. Find the total distance she traveled.

14. A pitcher contains $18\frac{5}{9}$ ounces of apple juice. If $7\frac{2}{3}$ ounces of juice is poured out, how many ounces are left in the pitcher?

15. Owen and Scott each ordered a pizza for lunch. Owen ate $\frac{2}{16}$ of his pizza and Scott ate $\frac{3}{4}$ of his pizza. How much more pizza did Scott eat than Owen?

16. If $\frac{4}{15}$ of the candies in a bag of Skittles are red and $\frac{3}{10}$ are yellow, what fraction of the bag are red or yellow?

17. Last night, Olivia spent $1\frac{2}{5}$ hours on her math homework, then 45 minutes on her science homework. What is the total time she spent doing her math and science homework?

18. Cara is 5'6" tall and her husband Jack is 6'2" tall. Find the difference in their heights.

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Homework 6: Multiplying Fractions

Directions: Find each product. Give each answer as mixed number in simplest form.

1. $\frac{8}{15} \times \frac{3}{10}$

2. $3\frac{5}{9} \times -1\frac{1}{2}$

3. $-4\frac{3}{4} \times -\frac{2}{3}$

4. $-\frac{3}{8} \cdot 3\frac{1}{9}$

5. $2\frac{7}{10} \cdot 1\frac{11}{12}$

6. $-10 \cdot -\frac{5}{24}$

7. Jamie burned 480 calories in an exercise class on Monday. She took a different class the next day and burned $\frac{7}{8}$ as many calories as she did on Monday. How many calories did she burn on Tuesday?

8. The tallest building in Franklin is two-thirds the height of the tallest building in Mayville. If the tallest building in Mayville is $80\frac{13}{16}$ feet, find the height of the tallest building in Franklin.

9. Conner has $3\frac{3}{8}$ bags of mulch. If each bag covers $12\frac{1}{2}$ square feet, how many square feet can he cover?

10. Wayne had $16\frac{3}{4}$ gallons of gas in his car. If he used $\frac{2}{5}$ of the gas in his tank, how many gallons of gas does he have left?

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Homework 7: Dividing Fractions



Directions: Find each quotient. Give each answer as mixed number in simplest form.

1. $1\frac{5}{16} \div \frac{7}{12}$

2. $-\frac{6}{25} \div 5\frac{2}{5}$

3. $4\frac{4}{5} \div 3\frac{5}{9}$

4. $-1\frac{5}{6} \div -\frac{1}{2}$

5. $1\frac{3}{4} \div -2\frac{1}{10}$

6. $4\frac{11}{16} \div 6$

7. A jug contains $20\frac{3}{8}$ cups of lemonade. If you are serving guests at a summer picnic, how many glasses can you fill if each guest gets $1\frac{1}{2}$ cups of lemonade?

8. A book shelf is $3\frac{1}{2}$ feet long. If each book to be placed on the shelf is $2\frac{1}{4}$ inches wide, how many books can fit?

9. Mrs. Carson's science class is doing a science experiment. She has $17\frac{1}{3}$ cups of water that she is going to evenly distribute to each of the eight groups. How much water will each group get?

10. Evan ran $9\frac{3}{5}$ miles in one hour and twenty-four minutes. Find the average number of minutes it took him to complete one mile.

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Homework 8: Fraction Operations Review

**** This is a 2-page document! ****

Directions: Evaluate each expression. Give each answer as mixed number in simplest form.

1. $\frac{5}{8} + 2\frac{1}{8}$

2. $1\frac{5}{12} - \frac{7}{12}$

3. $\frac{5}{6} + \frac{2}{3}$

4. $\frac{7}{9} - 2\frac{1}{6}$

5. $2\frac{5}{6} - \left(-2\frac{1}{10}\right)$

6. $1\frac{7}{8} + \left(-2\frac{7}{12}\right)$

7. $-\frac{3}{10} \times -\frac{4}{9}$

8. $2\frac{2}{3} \times -\frac{1}{4}$

9. $-4\frac{1}{2} \cdot \frac{11}{12}$

10. $\frac{10}{27} \div \frac{5}{6}$

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11. $-1\frac{5}{8} \div 1\frac{1}{2}$

12. $-5\frac{5}{9} \div -\frac{10}{21}$

13. One lap around a race track is $2\frac{1}{2}$ miles. On their first lap, two race cars collided $\frac{3}{4}$ of the way. Find the distance the cars traveled before colliding.

14. It took Kyle $4\frac{3}{4}$ hours to climb up a mountain, then $3\frac{3}{20}$ hours to climb down. Find his total climb time.

15. Two shelves are on a wall with one directly above the other. One shelf is $4\frac{5}{8}$ feet above the floor and the other is $5\frac{9}{10}$ feet above the floor. Find the distance between the shelves.

16. Trisha is making flags with $40\frac{5}{16}$ yards of fabric. If each flag requires $3\frac{1}{8}$ yards, how many flags can she make?

17. Doug bought $2\frac{2}{7}$ pounds of gummy bears. If he gave $\frac{3}{5}$ of the bag to his friend, how much of the bag did he have left?

18. A fish tank has a small leak. If there were $20\frac{5}{8}$ gallons in the tank, then $19\frac{7}{12}$ gallons five hours later, how many gallons is the tank losing per hour?

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Homework 9: Fractions, Decimals, & Percents

**** This is a 2-page document! ****

Directions: Complete the chart below.

	Fraction	Decimal	Percent
1.	$\frac{3}{10}$		
2.		0.02	
3.			86%
4.	$\frac{15}{16}$		
5.		0.125	
6.			6%
7.	$\frac{7}{9}$		
8.		0.44	
9.			62.5%
10.	$\frac{13}{25}$		
11.		0.1	
12.			20.8%

Directions: Evaluate each expression.

13. $8.5 + 2.1$

14. $9.2 + 2.73$

15. $4.28 + 1.7$

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in

16. $4.7 - 3.3$

17. $6.18 - 4.92$

18. $5.7 - 1.15$

19. 6.3×7.2

20. 3.16×9

21. 5.2×1.75

22. $5.2 \div 4$

23. $1.75 \div 2$

24. $1.5 \div 2.5$

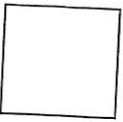
25. Mrs. Rainer would like to buy 28 composition notebooks for her math class. If they are on sale for \$0.94 each, how much will she spend, not including tax?

26. Owen bought 3.126 pounds of gummy bears. If he ate 1.4 pounds, how many pounds does he have left?

27. A dinner bill for a group of eight people came to \$156.16. Excluding tax and tip, how much will each person pay?

28. An antenna is placed on top of a 40.4-foot tall utility pole. If the antenna is 3.675 feet tall, find the total height of the pole including the antenna.

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Homework 10: Operations with Fractions, Decimals, and Percents

**** This is a 2-page document! ****

Directions: Evaluate each expression. Give your final answer as a fraction in simplest form.

1. $\frac{5}{6} - 0.5$

2. $0.35 + \frac{3}{8}$

3. $\frac{24}{25} + (-0.9)$

4. $0.45 \times \frac{2}{3}$

5. $-1\frac{7}{8} \times -0.4$

6. $-\frac{8}{15} \div 0.16$

Directions: Evaluate each expression. Give your final answer as a decimal.

7. $\frac{1}{5} + 3.4$

8. $0.875 - \frac{3}{20}$

9. $0.1 - \left(-\frac{31}{50}\right)$

10. $0.3 \cdot -\frac{5}{24}$

11. $-\frac{5}{6} \cdot -0.9$

12. $1\frac{3}{4} \div 2$

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Directions: Read carefully and solve. Give your final answer as a fraction in simplest form.

13. Marcy walked $3\frac{7}{10}$ miles on Saturday. On Sunday, she walked 0.25 more miles than she did on Saturday. How many total miles did she walk over the weekend?

14. Louie drove $50\frac{1}{8}$ miles and used 2.5 gallons of gas. Find the number of miles driven per gallon of gas.

15. During a recent snowstorm, Boston got 2.8 feet of snow and New York City only got $1\frac{1}{3}$ feet of snow. How many more feet did Boston get than New York City?

16. Doug has two German Shepherds. The larger dog weighs $70\frac{1}{2}$ pounds. If the smaller dog weighs 75% as much as the larger dog, find the smaller dog's weight.

Directions: Read carefully and solve. Give your final answer as a decimal.

17. Jack's dinner bill was \$25.20. If Stephanie's dinner bill was $\frac{2}{3}$ of Jack's bill, how much was Stephanie's bill?

18. Jane bought 1.5 pounds of chicken, then went back to the store and bought $1\frac{13}{16}$ more pounds because it was on sale. How many total pounds did she buy?

19. Ken ran $2\frac{1}{2}$ miles in 20.8 minutes. How many minutes on average did it take him to run one mile?

20. Corinna's cell phone bill was \$52.75 in July. In August, her bill was 60% of her July bill. How much more did she pay in July than she did in August?

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Homework 11: Exponents, Perfect Squares, & Square Roots

Directions: Rewrite each expression using exponents. Then evaluate, if possible.

	Expanded Notation	Exponential Expression	Value
1.	$3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$		
2.	$19 \cdot 19$		
3.	$(-2) \cdot (-2) \cdot (-2) \cdot (-2) \cdot (-2) \cdot (-2) \cdot (-2)$		
4.	$7 \cdot 7 \cdot 7$		
5.	$(-5) \cdot (-5) \cdot (-5) \cdot (-5)$		
6.	$\frac{1}{4} \cdot \frac{1}{4} \cdot \frac{1}{4}$		
7.	$m \cdot m \cdot m \cdot m \cdot m$		
8.	$x \cdot y \cdot x \cdot x \cdot x \cdot y \cdot x \cdot x \cdot x \cdot x \cdot y$		

9. Circle each value that is a perfect square.

64 30 125 361 144 15 36 300 4

Directions: Find each square root.

10. $\sqrt{9}$	11. $\sqrt{121}$	12. $\sqrt{324}$
13. $\sqrt{49}$	14. $\sqrt{196}$	15. $\sqrt{400}$

Directions: Estimate each square root to the nearest tenth.

16. $\sqrt{42}$	17. $\sqrt{350}$	18. $\sqrt{162}$
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19. A square has an area of 484 square meters. What is the length of each side of the square?

20. The rectangle below is divided into three squares. If the total area of the figure is 225 square inches, find s to the nearest tenth.



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Homework 12: Scientific Notation

**Directions:** Evaluate each expression.

1. 10^2

2. 10^4

3. 10^7

Directions: Rewrite each expression as a fraction and as a decimal.

4. 10^{-1}

5. 10^{-3}

6. 10^{-6}

Directions: Write each number in standard form.

7. 8.25×10^4

8. 9×10^1

9. 1.5×10^7

10. 4.38×10^{-2}

11. 6.2×10^{-8}

12. 2×10^{-5}

Directions: Write each number in scientific notation.

13. 5,000

14. 7,400,000

15. 288

16. 0.00023

17. 0.97

18. 0.000000894

19. The height of Mount Everest: 29,029 feet

20. The weight of a grain of sugar:
0.000000625**Directions:** Place a $<$, $>$ or $=$ in the circle to complete each statement.

21. 10^4 10^5

22. 10^{-2} 10^{-3}

23. 7.9×10^8 1.2×10^9

24. 2.5×10^{-4} 4.3×10^{-6}

25. 620,000 6.5×10^4

26. 7.25×10^6 72,500,000

27. 8.16×10^{-3} 0.00816

28. 0.000028 5.3×10^{-6}