**MATH 7: STUDY GUIDE (FALL FINAL CHAPTERS 1-3)**

**Name: Hour:**

**1.1 Ordering and Rounding: examples on pages 2-4**

**Round each number to the specified place.**

1. 360,093 (*hundreds*) 3. 73.38498 (*hundredths*)

2. 1,500 (*thousands*) 4. 239.9542 (*tenths*)

**Compare using >, <, or =.**

5. 51,328 \_\_\_\_ 53,128 7. 19,584 \_\_\_\_ 19,854

6. 6,197 \_\_\_\_ 6,098 8. 364,579 \_\_\_\_ 364,579

**List in INCREASING order. List in DECREASING order.**

9. 123, 135, 153, 152, 132 11. 674, 476, 746, 467, 647

10. 241, 142, 214, 124, 421 12. 891, 918, 981, 198, 189

**1.2 Addition & Subtraction: examples on pages 8-10**

* **Tips:** If a **(pos)** # and a **(neg)** # take the difference between the two numbers, then see if you **started** with more positive or more negative.
* **Tips:** When both numbers are the same sign add them together **(pos + pos = more positive)** or **(neg + neg = more negative)**.
* **Tips:** When you subtract a negative number **(minus a minus)**, the number becomes a **positive number** (two negatives will cancel each other).

13. 4 + (–23) 17. –13 – (–8)

14. –15 + (–6) 18. –17 – 5

15. 144 19. 5,624,873

563 – 3,548,691

+ 6945

16. 336 + 5853 + 741 20. 51,131 – 39,298

**1.3 Estimating Sums & Differences: examples on pages 12-15**

* **Tips:** **Highest Place Value** = round the number to the far left.
* **Tips:** **Front-End Estimation** = use the far left digit only and make all other numbers zero.

**Estimate using highest place value.**

21. 89,811 + 5,498 22. 68,500 – 14,509

**Estimate using front-end estimation.**

23. 56,945 + 27,895 24. 94,399 – 76,760

**1.4 Multiplication & Division: examples on pages 18-22**

* **Tips:** If two numbers being multiplied have different signs **(– ● +)** the answer will be **negative (–)**.
* **Tips:** If two numbers being multiplied have the same sign **(+ ● +)** or **(– ● –)**, the answer will be **positive (+)**.
* **Tips:** When multiplying more than two numbers, if there are an **odd** number of negative signs the answer will be **negative (–)**.
* **Tips:** When multiplying more than two numbers, if there are an **even** number of negative signs the answer will be **positive (+)**.
* **Tips:** When dividing numbers with different signs **(– ÷ +)** the answer will be **negative (–)**.
* **Tips:** When dividing numbers with the same sign **(+ ÷ +)** or **(– ÷ –)** the answer will be **positive (+)**.

25. 6(–8)(2) 28. –32 ÷ 4

26. –3(–12) 29. –56 ÷ –7

27. 5,724 30. 26,810 ÷ 12

× 97

**1.5 Estimating Products & Quotients: examples on pages 25-29**

* **Tips:** **Highest Place Value** = round the number to the far left.
* **Tips:** **Front-End Estimation** = use the far left digit only and make all other numbers zero.

**Estimate using highest place value.**

31. 65,019 × 894 32. 24,558 ÷ 2,487

**Estimate using front-end estimation.**

33. 14,599 × 4,521 34. 36,412 ÷ 5,846

**1.7 Exponents: examples on pages 39-41**

* **Tips:** An exponent is a superscript located to the upper-right of a number (or letter) that tells how many times that base number is repeated.

35. 38.

36. 39.

37. 40.

**1.8 Square Roots: examples on pages 43-45**

41. 43.

42. 44.

**1.9 Order of Operations: examples on pages 46-47**

* **Tips:**  **PEMDAS** = (**P**)arenthesis (**E**)xponents (**M**)ultiplication (**D**)ivision (**A**)ddition (**S**)ubtraction
* **Tips:**  **(1)** Symbols of grouping **(2)** Exponents **(3)** Multiplication & Division (from left to right) **(4)** Addition & Subtraction (from left to right)

45. 46. 47.

**2.1 Writing Decimals: examples on pages 54-56**

**Write the phrase in standard form.**

1. five and eight thousandths 3. one hundred thirty-two and three tenths

2. seventy-six hundredths 4. six hundred eighty-four millionths

**Write the following in standard form.**

5. 5 + 0.9 + .001 7. 9(0.1) + 5(0.01) + 8(.001) + 2(.0001)

6. 26 + 0.7 + .0004 8. 3(100) + 6(10) + 7(1) + 4(0.1) + 1(0.01)

**Write each decimal in expanded form.**

9. 12.7 11. 0.516

10. 8.05 12. 0.2938

**2.2 Comparing & Rounding: examples on pages 58-61**

**Round each decimal to the specified place value.**

13. 1.091 (tenths) 15. 2,407.2355 (thousandths)

14. 251.3649 (hundredths) 16. 18,931.42637 (ten-thousandths)

**Compare by using >, <, or =.**

17. 0.5734 \_\_\_\_ 0.5743 19. 4.188 \_\_\_\_ 4.28

18. 18.610 \_\_\_\_ 18.61 20. 0.71 \_\_\_\_ 0.701

**Round 283,645.158974 to the specified place value.**

21. tenths 23. ten-thousandths

22. hundredths 24. hundred-thousandths

**2.3 Addition & Subtraction: examples on pages 63-64**

* **Tips:** Align all decimal places before adding or subtracting.

25. 521.2018 + 92.75193 26. 8,421.513 – 573.1689

27. 215.125 + (931.72 – 463.145) 28. 872.3492 – (21.513 + 325.1589)

**2.4 Multiplication: examples on pages 66-67**

* **Tips:** (1) Multiply (2) **Count** the total number of decimal places from both numbers. (3) Starting from far right and moving left, place the decimal point so the new total has the **same number of decimal places** as the previous two numbers.

29. 0.51 × 5.392 30. 7.6 × 9.384

31. 0.63479 × 0.852 32. 2.758 × 0.9364

**2.5 Division: examples on pages 70-73**

* **Tips:** Place the decimal point **directly above** where the answer will be located.
* **Tips:** (1) Divide the decimal and continue dividing until **one digit beyond** the rounding place. (2) Round the quotient to the specified place.
* **Tips:** (1) Move the decimal on the outside until there is **no decimal**. (2) Move the decimal on the inside the **same number** as the outside.

33. 65.92 ÷ 8 34. 305.13 ÷ 21 35. 15.45 ÷ 3.75

**Round to the nearest tenths. Round to the nearest cent. Round to the nearest thousandths.**

36. 54.3 ÷ 2.4 37. 0.819 ÷ 4.5 38. 78.1 ÷ 3.2

**2.8 Scientific Notation: examples on pages 86-89**

* **Tips:** An exponent is a superscript located to the upper-right of a number that tells how many times the base 10 number is repeated.

**Write each in scientific notation.**

39. 30,500 40. 160,400 41. 8,200,100

**Write each standard form.**

42. 7.18 × 103 43. 2.0079 × 105 44. 4.2063 × 108

**2.9 Operations in Scientific Notation: examples on pages 93-95**

* **Tips:** (1) Verify the powers of 10 are the same before adding or subtracting. (2) Line up the decimals and add or subtract the two numbers.

**Add or subtract, then write in scientific notation.**

45. (5.31 × 103) + (4.77 × 103) 46. (9.82 × 107) – (3.576 × 107) 47. (6.313 × 105) + (8.8 × 105)

* **Tips:** (1) Multiply the numbers. (2) Add the exponents.

**Multiply, then write in scientific notation.**

48. (4.86 × 109)(1.9 × 106) 49. (2.255 × 104)(3.7 × 104) 50. (5.572 × 103)(7.4 × 108)