**Name:** **Hour:**

# CHAPTER 1 STUDY GUIDE (WHOLE NUMBERS)

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

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

1. 360,093 (*hundreds*)
2. 1,500 (*thousands*)
3. 73.38498 (*hundredths*)
4. 239.9542 (*tenths*)

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

5. 51,328 ____ 53,128
6. 6,197 ____ 6,098
7. 19,584 ____ 19,854
8. 364,579 ____ 364,579

**List in INCREASING order.**

9. 123, 135, 153, 152, 132
10. 241, 142, 214, 124, 421

**List in DECREASING order.**

11. 674, 476, 746, 467, 647
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)
14. –15 + (–6)
15.
$$\begin{array}{r} 144 \\ 563 \\ +\ 6945 \end{array}$$
16. 336 + 5853 + 741
17. –13 – (–8)
18. –17 – 5
19.
$$\begin{array}{r} 5{,}624{,}873 \\ -\ 3{,}548{,}691 \end{array}$$
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)
26. –3(–12)
27.
$$\begin{array}{r} 5{,}724 \\ \times\ 97 \end{array}$$
28. –32 ÷ 4
29. –56 ÷ –7
30. 26,810 ÷ 12

**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. $65{,}019 \times 894$

32. $24{,}558 \div 2{,}487$

**Estimate using front-end estimation.**

33. $14{,}599 \times 4{,}521$

34. $36{,}412 \div 5{,}846$

**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. $(-5)^3$

36. $(-3)^4$

37. $(2)^3 + (-5)^2$

38. $(-3)^3 - (4)^2$

39. $(-2)^3 \times (-3)^3$

40. $(8)^3 \div (-4)^2$

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

41. $\sqrt{169}$

42. $3\sqrt{225}$

43. $\sqrt{83 + 38}$

44. $5\sqrt{72 - 47}$

**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. $\sqrt{144} \div 3 + (3 - 8) \times (-2)^3$

46. $(-3)^3 - (-3 \times -7 + 42) \div \sqrt{49}$

47. $(-18 \div -3) + 3 \times (-4)^2 + 2\sqrt{64}$