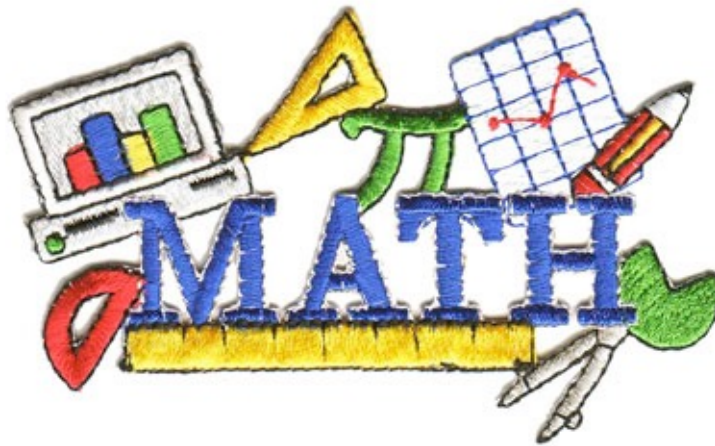


7th Grade Math

Benchmark 1

Parent Handbook




This handbook will help your child review material learned this quarter, and will help them prepare for their first Math Benchmark Test. Please allow your child to work independently through the material, and then you can check their work using the answer key in the back of the handbook. If you have any questions or concerns about this material, please contact your child's teacher. Thank you for your support.

Seventh Grade Benchmark #1

Math Essential Standards

Learning Objective #1:

 "Add and subtract integers and other rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram."

Practice:

1. $(-75) - (-32) + 65 =$

- a. 42
- b. 22
- c. -42
- d. 108

2. Jeremiah played a football game yesterday. In the first quarter he gained 20 yards, then lost 10. He then gained 15 yards back and then another 20 more. How many yards were gained or lost?

- a. 55 yards gained
- b. 10 yards lost
- c. 45 yards gained
- d. 35 yards gained

3. If Nicholas gained 22.25 pounds, but lost $5\frac{3}{4}$ pounds, how much weight did he gain?

- a. 17.5 lbs
- b. 27 lbs
- c. 16.5 lbs
- d. 28 lbs

4. Solve $-35 - 4\frac{1}{4} =$

- a. -39.25
- b. -30.75
- c. 39.25
- d. -31.25

Learning Objective # 2:

 **"Multiply and divide integers and other rational numbers."**

Practice:

5. What is the product of 5, (-1), and (-2)?

- a. 10
- b. -10
- c. 8
- d. -11

6. What is the quotient of 144 and (-12)?

- a. 12
- b. -12
- c. 11
- d. -13

7. Find the product $(3.47) \times (-0.003) =$


8. Find the quotient $-2\frac{3}{4} \div 5\frac{1}{2} =$

- a. $-\frac{1}{2}$
- b. $\frac{1}{2}$
- c. $15\frac{1}{8}$
- d. $-15\frac{1}{8}$

9. What is the area of a rectangular rug that measures $12\frac{3}{4}$ feet in length and $10\frac{1}{2}$ feet in width?

- a. $-133\frac{7}{8}$
- b. $120\frac{3}{8}$
- c. $134\frac{1}{2}$
- d. $133\frac{7}{8}$

Learning Objective #3:

 ***“Solve mathematical problems and problems in real-world context involving the four operations with rational numbers.”***

Practice:

10. Sammy ordered a basic turkey sandwich which cost \$3.50. For every topping he wanted, he had to pay an extra \$0.35. How much would his sandwich cost if he ordered 5 toppings?

11. Thomas and his 3 best friends went to the movies. Each movie ticket was \$7.50. Each person got a small soda for \$2.00 and a small popcorn for \$3.50. How much, in total, did they spend?

- a. \$52.00
- b. \$39.00
- c. \$13.00
- d. \$35.50


12. There are 230 seventh graders in Marsha’s school. Marsha knows about $\frac{1}{3}$ of them from elementary school. Approximately how many of the seventh graders does Marsha know?

- a. 100 students
- b. 67 students
- c. 70 students
- d. 77 students

13. In the school cafeteria, $\frac{2}{3}$ of the students are sixth graders. Of those sixth graders, $\frac{3}{4}$ are wearing tennis shoes. What fraction of the students in the cafeteria are sixth graders wearing tennis shoes?

- a. $\frac{1}{2}$
- b. $\frac{2}{4}$
- c. $\frac{8}{9}$
- d. $1\frac{5}{12}$

Learning Objective #4:

 ***“Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.”***

Practice:

14. Which property is used in the following expression?

$$3(3 + 5) = 9 + 15$$

- a. Associative Property
- b. Commutative Property
- c. Distributive Property
- d. Identity Property

15. Which of the following do not show the Commutative Property?


- a. $3 + x = x + 3$
- b. $19ab + 4 = 4ab + 19$
- c. $15(2) + 4 = 4 + 15(2)$
- d. $2x + 8y = 8y + 2x$

16. Which of the following is NOT an equivalent expression for $9a - 54$?

- a. $9(a - 6)$
- b. $-54 + 9a$
- c. $3(3a - 18)$
- d. $54a - 9$

17. Simplify $3x - 7(2x + 3) + 12$.

Learning Objective #5:

 ***“Use variables to represent quantities in mathematical problems and problems in real-world context, and construct simple equations to solve problems.”***

Practice:

18. Solve & check. $9 - 6n = 45$

- a. 9
- b. 6
- c. -9
- d. -6

19. The playground is 620 feet wide. If the perimeter of the field is 2,200 feet, what is the playground's length?


- a. 480 feet
- b. 960 feet
- c. 790 feet
- d. 1580 feet

20. Nancy delivers pizzas. She earns \$8 an hour, plus tips. If she earned \$620^{1/3} last month including \$140 in tips, how many hours did she work?

- a. 90 hours
- b. 77.5 hours
- c. 60 hours
- d. 95 hours

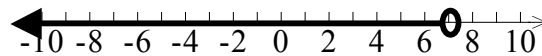
21. Mandy, a marathon runner, has been training to improve her time of 6 hours 33 minutes. She improved it by 13 minutes when she started. The next time she ran she improved by 22 minutes. When she finally ran at the competition, Mandy improved by an additional 16 minutes. What is Mandy's most recent running time?

Learning Objective #6:

 **“Use variables to represent quantities in mathematical problems and problems in real-world context, and construct simple inequalities to solve problems.”**

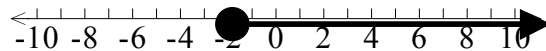
Practice:

22. Which solution set is represented in the graph below?



- a. $x > 7$
- b. $x < 7$
- c. $x \leq 7$
- d. $x \geq 7$

23. Which inequality represents the graph below?



- a. $-5x - 8 > 2$
- b. $-5x - 8 \geq 2$
- c. $-5x - 8 < 2$
- d. $-5x - 8 \leq 2$

24. Steven has 114 baseball cards. Steven and Lucas have more than 130 baseball cards together. Which of the following inequalities represents the number of baseball cards the two boys have?

- a. $114 + b > 130$
- b. $114 - b > 130$
- c. $114 + b < 130$
- d. $b > 114 + 130$

25. Blaire needs more than 627 total points on assignments in her math class to pass. She only has 228 points and needs to do some extra credit assignments that are worth 57 points each. This can be expressed as the inequality: $57x + 228 > 627$. How many extra credit assignments does Blaire need to complete in order to pass?

Benchmark 1 Essential Math Vocabulary

- ◆ **integer** - one of the set of whole numbers and their opposites.
- ◆ **rational number** - a number than can be expressed as a ratio which includes integers, fractions, and decimals.
- ◆ **sum** - the answer to an addition problem.
- ◆ **difference** - the answer to a subtraction problem.
- ◆ **product** - the answer to a multiplication problem.
- ◆ **quotient** - the answer to a division problem.
- ◆ **fraction** - a number in the form a/b , where b is not zero.
- ◆ **decimal** - a place value number system based on groupings by powers of ten.
- ◆ **mixed number** - a number that includes a whole number and a fraction or decimal.
- ◆ **improper fraction** - a fraction in which the numerator is greater than the denominator.
- ◆ **numerator** - the top number in a fraction that tells how many equal parts out of total parts in a fraction.
- ◆ **denominator** - the bottom number in a fraction that tells how many total parts in a fraction.
- ◆ **reciprocal** - a number that has the denominator and numerator are exchanged so that when multiplied, equals 1 (for example, the reciprocal of $2/3$ is $3/2$).
- ◆ **order of operations (PEMDAS)** - the sequence in which operations are performed when evaluating an expression: Parenthesis, Exponents, Multiplication and Division, Addition and Subtraction.

Benchmark 1 Essential Math Vocabulary

- ◆ **equation** - a mathematical sentence in which equivalent values are separated by an equal sign.
- ◆ **variable** - a letter used to represent a number value in an expression or an equation.
- ◆ **inverse operation** - a related but opposite process.
- ◆ **solve** - to find the value(s) of a variable(s) that makes a mathematical sentence (equation) true.
- ◆ **distributive property** - the multiplication of a sum by multiplying each addend separately and then adding the products.
- ◆ **associative property** - the grouping of numbers undergoing the operation does not change the result.
- ◆ **identity property** - the product of 1 and any number is that number, and the sum of any number and 0 is that number.
- ◆ **commutative property** - the property in addition and multiplication that states the order in which two terms are added or multiplied does not change results.
- ◆ **inequality** - a mathematical statement that says two expressions are not equal.
- ◆ **solution set** - all the values that make an equation or inequality true
- ◆ **graph** - to draw a representation of a given mathematical function.
- ◆ **equivalent expressions** - expressions that simplify to an equal value when numbers are substituted for the variables of the expression.

7th Math Benchmark #1
Parent Handbook ANSWER KEY

1. B
2. C
3. C
4. A
5. A
6. B
7. -0.01041
8. A
9. D
10. \$5.25
11. A
12. D
13. A
14. C
15. B
16. D
17. $-11x - 9$
18. D
19. A
20. C
21. 5 hours 42 minutes
22. B
23. D
24. A
25. $x > 7$