

Pretest (Pre-Algebra Review)

Name: _____

Recognizing operations with real life scenarios

1. How many more bricks would you need to place on the tower to the right to make the towers even?



Circle One

Addition
Subtraction
Multiplication
Division

Answer: _____

2. Guitar Hero was original \$52.99 and now it is \$47.99, how many dollars would you save?



Circle One

Addition
Subtraction
Multiplication
Division

Answer: _____

3. How many Jenga pieces are there?



Circle One

Addition
Subtraction
Multiplication
Division

Answer: _____

4. There are 246 skittles in a bag. If 3 people wanted to split these evenly how many skittles would each person get?



Circle One

Addition
Subtraction
Multiplication
Division

Answer: _____

Addition with integers

5. $-6 + 14$

6. $-4 + (-8)$

7. $11 + (-17)$

Subtraction with integers

Definition of Subtraction: (Subtraction means to simply "add a negative.")

For example, $21 - 10$ is the same thing as $21 + (-10)$

8. $-15 - 14$

9. $4 - 7$

10. $21 - (-11)$

11. $-7 - (-3)$

Addition with decimals and fractions

12. $0.8 + 3.7$

13. $\frac{3}{4} + \frac{2}{3}$

Repeated Addition

Definition of Multiplication: (Multiplication is repeated addition of the same number.)

For example, $7+7+7+7+7$ is the same thing as 7×5

Rewrite the expressions below using the definition of multiplication. Then simplify.

14. $5+5+5+5+5+5$

15. $(-4)+(-4)+(-4)+(-4)+(-4)+(-4)+(-4)+(-4)+(-4)$

Many Forms of Multiplication (There are multiple symbols that mean to multiply.)

There are several ways to write 7×5 .

For example, the expression 7×5 can be written as $7 \cdot 5$ or $7(5)$.

Simplify the expression.

16. $7 \cdot 3$

17. $-2(8)$

18. -4×-11

Multiplication with decimals and fractions

19. $\frac{5}{7} \cdot \frac{2}{3}$

20. $0.4(6)$

21. $\frac{4}{15} \times \frac{3}{8}$

Division with Fractions

Definition of Division: (Division is simply "Multiplying by the reciprocal.")

For example, $\frac{4}{5} \div \frac{2}{3}$ is the same thing as $\frac{4}{5} \cdot \frac{3}{2}$.

Rewrite the expressions below using the definition of division. Then simplify.

22. $\frac{3}{5} \div \frac{1}{2}$

23. $\frac{5}{12} \div \frac{15}{8}$

24. $\frac{6}{7} \div 3$

25. $18 \div \frac{2}{3}$

Many Forms of Division (There are multiple symbols that mean to divide.)

There are several ways to write $7 \div 5$.

For example, the expression $7 \div 5$ can be written as $7 \cdot \frac{1}{5}$ or $\frac{7}{5}$.

Simplify the expression. Make sure to reduce completely.

26. $-20 \div 45$

27. $-\frac{15}{27}$

28. $\frac{4}{3.5}$

29. $-9 \times \left(\frac{1}{15}\right)$

30. $\frac{15}{70} \div \frac{3}{35}$

Fraction Word Problems (Can you recognize when to add, subtract, multiply or divide?)

31. Maria worked $7 \frac{1}{2}$ hours on Friday, $8 \frac{1}{2}$ hours on Saturday and $10 \frac{1}{2}$ hours on Sunday. How many hours did she work all weekend ?

32. Maria's check was \$180.00. She plans on putting $\frac{1}{4}$ of this amount in the bank. How much money will she put in the bank ? _____

33. $3 \frac{1}{2}$ inches of rain fell on Monday. $2 \frac{1}{4}$ inches of rain fell on Tuesday. How much more rain fell on Monday? _____

34. 12,000 people are registered to vote. During the last election $\frac{3}{4}$ of registered voters voted. How many people voted ? _____

35. John has a 12 foot long board. How many $1 \frac{1}{2}$ foot pieces can he cut ?

36. Peri needs to put in 40 hours this week. She worked $8\frac{1}{2}$ hours on Monday, $6\frac{1}{2}$ hours on Tuesday, 8 hours on Wednesday and $6\frac{1}{3}$ hours on Thursday. How many hours does she need to work on Friday to get to 40 ? _____
37. Maria needs $1\frac{3}{4}$ cups of flour to make one batch of oatmeal cookies. How much flour would she need if she tripled the recipe ? _____
38. Cory walks $1\frac{1}{2}$ miles every day. How many miles does he walk in a week ? _____

DMR

Definition of Powers/Exponents (Power are simply repeated multiplication of the same number.)

For example, $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$ is the same thing as 2^5

Rewrite the expressions below using the definition of multiplication. Then simplify.

39. $5 \cdot 5 \cdot 5$

40. $(-3)(-3)(-3)(-3)$

Describe AND correct the error in evaluating the power.

41. $(0.4)^2 = 2(0.4) = 0.8$

42. $\left(\frac{2}{3}\right)^3 = \frac{6}{9} = \frac{2}{3}$

Definition of Square Root (A square root is a number that produces a specified quantity when multiplied by itself.

For example, the square root of 25 is 5.

Rewrite the expressions below using the definition of a square root. Then simplify.

43. The square root of 49.

44. $\sqrt{16}$

45. $\sqrt{81}$

46. $\sqrt{\frac{36}{100}}$

Definition of an absolute value (An absolute value is “how far a number is from zero”.)

Example "6" is 6 away from zero, but "-6" is also 6 away from zero.

So the absolute value of 6 is 6, and the absolute value of -6 is also 6.

The symbol "|" is placed either side to mean "Absolute Value", so we write: **$|-6| = 6$**

47. What is $|-3|$?

48. What is $|2 - 7|$?

49. What is $|5 \times -3|$?

50. What is $-|5 + 9|$?

Scoring Topics:

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|----------|--------------------------------------------|-----------|----------------------------------------|
| 1. _____ | Recognizing operations | 8. _____ | Division with fractions |
| 2. _____ | Addition with integers | 9. _____ | Multiple forms of division |
| 3. _____ | Subtraction with integers | 10. _____ | Operation word problems (+, -, ×, ÷) |
| 4. _____ | Addition of decimals and fractions | 11. _____ | Power/Exponents |
| 5. _____ | Repeated addition (Multiplication) | 12. _____ | Square Roots |
| 6. _____ | Multiple forms of multiplication | 13. _____ | Absolute value |
| 7. _____ | Multiplication with decimals and fractions | | |

3 – Fully understands

2 – Mainly understands

1 – Needs more practice

0 – Needs to relearn