Name_____

Archbishop Curley High School ***Algebra 1 Summer Work***

Exponents and Roots

Solve.

1.) 9^2 =

2.) 3^4 =

3.) 5^3 =

4.) $(-2)^5$ =

5.) $(-4)^2$ =

6.) 6^{-2} =

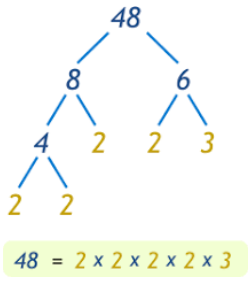
7.) $\sqrt{144}$ =

8.) $\sqrt[3]{27}$ =

9.) $49^{\frac{1}{2}}$ =

Prime Factorization

Use factor trees to find the prime factorization.



1.) 88

2.) 42

3.) 72

4.) 256

Operations with Integers

Solve.

1.) $4 + (-8) =$

2.) $3 - 9 =$

3.) $-12 + 15 =$

4.) $-7 - 10 =$

5.) $6 \times (-7) =$

6.) $-14 \times 3 =$

7.) $-8 \times (-12) =$

8.) $-3 - 5 + 8 =$

9.) $-5 \times 3 \times (-4) =$

Order of Operations

Use order of operations to solve.

1.) $5 + 3 - 2 + 9 - 7 =$

2.) $6 + 3 \times 7 + 18 \div 3 =$

3.) $15 - 3^2 + 2 \times 8 =$

4.) $12 - (3 + 5) \div 2 =$

5.) $(4^2 - 4) \div 3 \times 8 + 10 =$

6.) $80 - 4 \times 10 \div 8 =$

Simplifying Fractions

Simplify by finding common factors.

1.) $\frac{5}{30} =$

2.) $\frac{9}{15} =$

3.) $\frac{12}{21} =$

4.) $\frac{17}{18} =$

Improper Fractions and Mixed Numbers

Change the improper fractions to mixed numbers and change the mixed numbers to improper fractions. Simplify.

1.) $4\frac{5}{6}$ =

2.) $12\frac{7}{8}$ =

3.) $7\frac{1}{3}$ =

4.) $\frac{15}{3}$ =

5.) $\frac{61}{7}$ =

6.) $\frac{34}{4}$ =

Operations with Fractions

Solve and simplify. Find a common denominator when adding and subtracting fractions. Use the "keep, change, flip" strategy when dividing fractions.

1.) $\frac{1}{4} + \frac{2}{5}$ =

2.) $\frac{3}{7} - \frac{3}{4}$ =

3.) $\frac{5}{8} + \frac{2}{3}$ =

4.) $\frac{2}{3} \times \frac{5}{6}$ =

5.) $\frac{1}{4} \times \frac{8}{5}$ =

6.) $\frac{5}{6} \div \frac{1}{4}$ =

Decimals and Percents

Change the decimal to a percent or the percent to a decimal.

1.) .4 =

2.) .07 =

3.) .125

4.) 38% =

5.) 9% =

6.) 2.6% =

Combine Like Terms

Combine like terms to simplify.

1.) $5x + 8 - 3x + 6 =$

2.) $x - 3 + x - 1 - 2x + 2 =$

3.) $16x^2 + 14 - 4x^2 - 11 =$

4.) $5x^2 + 4 - 2x + 6 - x^2 + 3x =$

Distributive Property

Use the distributive property to simplify.

1.) $2(x + 4) =$

2.) $x(x - 3) =$

3.) $5(2x + 1)$

4.) $3x(4x - 3) =$

5.) $x(1 + 5) =$

6.) $4(2x + 4)$

Substitution

Solve using the given value for each variable.

1.) $2g + 8 \ (g = 3)$

2.) $5z - 7 \ (z = 2)$

3.) $3a^2 - 9 \ (a = 4)$

Solving Equations

Solve for the given variable.

1.) $k + 3 = 8$

2.) $2p - 4 = 10$

3.) $8z = 32$